

The Little Deaf Child

JOHN DUTTON WRIGHT

THE
LITTLE
DEAF
CHILD



AMERICAN FOUNDATION
FOR THE BLIND INC.







May This little book
bring new courage
for old despair.

John N. Wright
New York, 1927

The Little Deaf Child

A Book for Parents

By

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New York City

BY THE SAME AUTHOR

Educational Needs of the Deaf

What the Mother of a Deaf Child ought to Know

Handbook of Speech Teaching to the Deaf

Handbook of Auricular Training

Published by
THE WRIGHT ORAL SCHOOL
New York City

H V 2 3 8 0

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By JOHN DUTTON WRIGHT

To my beloved wife from whom
I daily receive inspiration and
encouragement



THE LITTLE DEAF CHILD

A BOOK FOR PARENTS

AUTHOR'S FOREWORD

Please read the book through from beginning to end before trying to put its suggestions into practical operation in teaching a child.

You must educate yourself before you can teach another.

IN a little book written to guide physicians in advising parents of deaf children, I said:

“The situation of a deaf child differs very much, from an educational standpoint, from that of the little hearing child. Two hours a day playing educational games in a kindergarten is as much as is usually given, or is needful, for the little hearing child up to six or seven years of age; and his mental development and success in after life will not be seriously endangered if even that is omitted and he does not begin to go to school until he is eight or nine. The hearing child of eight who has never been in school and cannot read or write has, nevertheless, without conscious effort, mastered the two most impor-

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tant educational tasks in life. He has learned to speak and has acquired the greater part of his working vocabulary. In other words, although he has never been across the threshold of a school, his education is well advanced for his years and mental development.

“The situation of the uninstructed deaf child of eight is very different. The task which it has taken the hearing child eight years to accomplish, the deaf child of eight has not even begun. He cannot speak a word; he does not even know that there is such a thing as a word. He is eight years behind his hearing brother, and even if he starts now, unless some means can be found for aiding him to overtake his brother educationally, he will be only eight years old in education when he is sixteen years of age. And when he is sixteen, the psychological period will have passed for acquiring what he should have learned when he was eight. The fact that the child is deaf does not exempt him from the inexorable laws of mental psychology and heredity. In the development of the human mind there is a certain period when all conditions are favorable for the acquisition of speech and language. Unnumbered generations of ancestors acquired speech and

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language at that stage of their mental development, and this little deaf descendant's mind obeys the law of inherited tendencies.

"If the speech and language-learning period, from two years of age to ten, is allowed to pass unimproved, the task of learning them later is rendered unnecessarily difficult.

"Therefore, in the case of the little deaf child, the years from two to ten are crucial, and of far greater importance than the same period in the case of the hearing child."

Even though the child be totally deaf from birth, he can nevertheless be taught to speak and to understand when others speak to him. He can be given the same education that he would be capable of mastering if he could hear. The mother need not be despairing nor heartbroken. A prompt, brave, and intelligent facing of the situation will result in making the child one to be proud of and to lean upon.

In the year 1915 I published a little book with the cumbersome title "What the Mother of a Deaf Child Ought to Know." It was not much of a book, but it was the only thing of its kind in print, and has been purchased by people all over the world. It has been trans-

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lated into Japanese and Mahrati, one of the principal languages of India.

That little book is now out of print and, through a mistake of the publishers, the plates were destroyed. As requests continually come for copies, I have prepared another volume that will cover the subject a little more adequately.

I have been principally influenced to do this by the instances that keep coming to my notice where the first little book, and my other writings, have proved of assistance to perplexed parents in widely separated parts of the world. One case that will serve as an example came to my knowledge when, in 1924, I visited Japan for the second time. In a remote town, on the shores of a beautiful lake, a Japanese father with six children discovered that one of them, a little daughter, was not progressing as the others. Long investigation and much consultation finally brought him to the conclusion that the little girl was deaf. He went to the nearest city, where there was a school for deaf children, but the conditions, both physical and educational, which he found there were not such as he was willing to accept for his child. But what else could he do? On the occasion of my first

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visit to Japan, in 1920, I had visited that school and had presented them with a subscription to the *Volta Review*, a magazine published in Washington, D. C., on behalf of the oral education of the deaf. A copy of this magazine was given to him and in it he read of my little book and of the Correspondence Course which I have prepared and which is conducted by the staff of my school in New York. He wrote at once for the book and subscribed for the Correspondence Course. Arranging for the conduct of his business in such a way as to leave his time less fully occupied, he set about the task of teaching his little deaf daughter. He threw himself into the work heart and soul. He not only put to use all the material that came to him through the Correspondence Course, but he manufactured much other material. All the lessons had, of course, to be translated into Japanese before they could be used with the little girl. Many modifications were required to carry out the suggestions in a language different from that for which they were designed. He met the problem so successfully that when I saw his little child, a year and a half after he had begun his work, I found her able to understand much that was said to her

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in Japanese, and even to reply with some speech, and to ask many questions. She could both read and write a little and could add, subtract, multiply and divide. The father had devoted practically his whole time to the child during that year and a half, going to her bedside when she awoke in the morning, and being the last to see her when she went to bed at night. It had meant a considerable sacrifice of leisure, effort and money, but the results were so fine that he was the happiest of men. He was training a young Japanese lady and his eldest daughter also to relieve him of much of the teaching of the little deaf child, and soon expected to be able again to devote himself more fully to his business.

That was, of course, an exceptional instance, and the only one in my long experience in which such a task has been undertaken by a father, but the same thing is being done every year in many parts of the world by devoted mothers, and their deaf children, as they grow up, "call them blessed."

The first book was dedicated to my wife, at whose suggestion it was written, and the present volume is affectionately offered to her, for it owes much to her interest and inspiration.

PREFACE

THERE are some 17,000 children in Special Schools for the deaf in the United States. Probably there are as many more who are not of school age or have not as yet been sent to schools for the deaf. Let us say thirty thousand in a population of ninety millions, or $3\frac{1}{3}$ per cent.

It is estimated that in our public schools 1 per cent. of the pupils have hearing so imperfect as to form a handicap, but not sufficiently imperfect to make them suitable candidates for Special Schools for the deaf. There is probably another 1 per cent. not yet in school. This would make a rough total of 5 per cent. of the children in our country with impaired hearing, or four and one-half million in a population of ninety millions.

There will probably always be deaf children in the world, but if it could be brought about that every young man and young woman before becoming engaged to be married had the information contained, for example, in the printed lectures of Dr. Kerr

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Love, of Glasgow, on "The Causes and Prevention of Deafness" and could be persuaded to act in accordance with the suggestions based upon known facts, the number of cases of deafness in the world would be enormously reduced.

Every opportunity should be seized by those possessing the information to spread a knowledge of it, and, while this book is made for the purpose of helping the parents of little deaf children to solve the problems with which they are faced by the cases of deafness that have already occurred, it may not be amiss to briefly state essential facts that are known concerning the causes and possible prevention of deafness, in the hope that this knowledge may be passed on to the younger generation who will be future fathers and mothers.

First with regard to the chances of having children who are born with impaired hearing.

It is a very remote chance that such a child will be born to two persons whose hearing is entirely normal and in whose families there are no relatives who were born deaf.

The possibility is somewhat greater if there are relatives on either side who were born deaf, and this chance is increased if

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there are such relatives on both the father's and the mother's side.

These chances are further increased if the parents are related to each other; as, for example, first or second cousins.

It will be noticed that I have particularly said "relatives who were born deaf." The existence of relatives who have been made deaf by illness, accident or old age, does not materially increase the chances of the related couple having deaf children, though it may indicate a "strain of weakness" in the matter of hearing that might render the occurrence of deaf children slightly more probable than if all history of deafness was absent in the families.

The existence of a syphilitic, epileptic or alcoholic history in the family of either father or mother greatly increases the chances of deaf offspring, as it does of other defects.

The marriage of a person without deaf relatives but whose hearing has been impaired or destroyed by illness, such as cerebro-spinal meningitis, scarlet fever, measles, whooping cough, typhoid fever, mumps or a fall or blow, to name the most common causes, is no more likely to result in deaf

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children than that of a person with normal hearing.

A person whose hearing has been impaired from birth, or from such early infancy that no one can be sure it was not from birth, is more likely to have a deaf child than a person with perfect hearing.

If both parents are in this condition the chances are enormously increased, and if, on either or both sides, there is a history of deafness in the family, the chances are still further increased.

The time may be far distant when the fundamentals of eugenics will play any considerable part in the choice of a wife or a husband, but that should be the case now, and every opportunity should be seized to inform young people of the laws of heredity.

Deafness in the child may come from the failure of the mother to take proper care of herself during the pre-natal period, or from insufficient sanitary and surgical precautions, and the use of instruments at the time of birth.

So much for the prevention of the occurrence of congenital deafness, that is, deafness at birth.

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With regard to the prevention of deafness as a result of illness I can only say here that any sickness that is accompanied by continued high fever, especially if there is infection of the nose, throat, ear or brain, is a menace to the hearing. Neglected catarrhal colds are also a prolific cause of impaired hearing.

I have already mentioned the principal illnesses that result in deafness, and this deafness might in many cases have been prevented if, during the early stages of the disease, an ear specialist had been called in consultation with the regular family physician. The slightly increased expense may save vastly greater expenditures later.

Occasionally deafness comes from carelessness in connection with the cleanliness of the outer ear and the prolonged presence of hardened wax. Also from the insertion of things into the ear. A good rule is to put nothing but the elbow into the ear.

In the case of all the diseases I have mentioned and in cases of tonsilitis, quinsy, diphtheria and influenza where the ear is affected, every precaution should be taken to prevent the infection from spreading to the

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inner ear, and an ear specialist should be called together with the general practitioner.

Not only should the ear specialist be consulted in the cases of the sicknesses I have named, but if any impairment of hearing is noticed at any time he should be given an opportunity to carefully examine the ears and determine what is causing the trouble. Sometimes it is due merely to an accumulation of hard wax, or to the beginning of a little inflammation that will quickly disappear under treatment, but that may result in permanent deafness if neglected.

While much has been learned about the prevention of deafness, comparatively little has been discovered concerning its cure when once it has occurred. It is very accurate to say that, at present, deafness is incurable. In the case of progressive catarrhal deafness the ear specialist has developed means of *retarding* the advancement of the disease, but he is not able to cure it.

Where deafness is due to one of the various causes I have mentioned, and is definitely established, I am of the opinion that all that can be done is to keep everything clean and sound and the person in the best possible general health. Everything else has seemed to be useless, and often injurious.

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The osteopath, chiropractor, or whatever that type of treatment may be called, has failed absolutely in each of the very many cases that have come within my personal knowledge during the past thirty-eight years where that practice has been employed. I have never known of a single instance where the slightest benefit has resulted from months and even years of such treatment, and I consider it a waste of time, money and the children's strength.

In the cases of little children the problem then becomes solely one of training and education. Very much can be done along these lines at home while the child is yet too young for school and that is where I hope this little volume may be of some service to the perplexed mother, wholly inexperienced in the situation which confronts her.

Having spent thirty-eight years in the actual teaching and training of deaf children, as well as having had exceptionally wide opportunities for observing the work of others in all parts of the world, I am able to enter fully and sympathetically, as well as intelligently, into the difficulties and labors involved in the early training and first teaching of the little deaf child by its mother.

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It is not possible within the limits of this small volume to give explicit and detailed directions for the daily work throughout a year, or period of years, nor can that be successfully done by means of a book. It requires frequent correspondence and constant adaptation of the work to the individual necessities and personal situation of each child.

To meet this need I prepared some years ago a "Correspondence Course" which is conducted by the staff of my school in New York. This course is being used successfully by parents and friends of deaf children in many parts of the United States and in remote portions of the world, and is enabling many a deaf child to use the early and priceless years of his life before school age is reached.

In this volume I will endeavor to outline the work that can profitably be done at home by untrained persons, but if the continued, systematic teaching of the child is to be done at home either a trained teacher should be employed, or the mother should subscribe to the "Correspondence Course."

The matter which deals with the actual training of the child I will arrange in three periods. 1st—For the first two years of life.

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2nd—For the third and fourth years of life.

3rd—For the fifth year of life. When the age of five or six has been reached, it is best to enter the child in some suitable school, or employ a specially trained and experienced teacher in the home.

If the reader does not get the book till the child has reached some one of the later stages of maturity, say when he is four or five years of age, without having had any of this special training, and it is desired to then begin his training in accordance with the suggestions contained here, it would be well to begin at the very beginning, as one would with a very young child, and go systematically through with every step outlined in the following pages, just as if the beginning had been made at one year instead of five. The early exercises will be very simple and easy for the older child and it will not be necessary to dwell upon them so long as in the case of the younger, but the early steps should be carefully taken just the same. While it will be possible to pass over the preliminary training faster, the speed should not be such as to leave the abilities unacquired that the exercises are designed to develop. The fundamental principles apply equally to all ages.

SOME NOTS

Do not be downcast.

Deafness does not, necessarily, bring dumbness.

Do not consider the deaf child as different from other children.

Do not cease talking to him.

Do not speak with exaggerated facial movements.

Do not exempt him from the duties and tasks and obedience properly demanded of all children.

Do not let him grow selfish.

Do not let him grow indifferent.

Do not be in haste.

Do not show impatience.

CHAPTER I

Deafness is by no means the worst of misfortunes

THE FIRST TWO YEARS OF LIFE

SERIOUS impairment of hearing is, unquestionably, a misfortune under any circumstances, and it is a far greater misfortune in the case of a little child than for an adult, but there are many vastly greater calamities.

There is no reason for depression, or discouragement, on the part of the deaf child, or its parents, in contemplating a life even wholly deprived of the sense of hearing. Mr. Edison says he has found many advantages in his profound deafness.

So far as I know, there is no sphere of activity, except music, that is not open to the successfully taught and properly trained and educated deaf child, if his character and mental equipment would have suited him for that activity had not hearing been impaired, or absent.

Every form of pleasure, with the exception of music, is open to even the totally and con-

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genitally deaf person, and while there are some careers more easily attained by deaf people than certain other careers, it would be hard to discover any profession, or occupation, in which some deaf man or woman is not being successful.

Certain forms of occupation present greater difficulties to the totally deaf than others, but there are many activities in which they can take part with little, or no handicap. Such, for example, are all occupations involving manual dexterity and quickness and accuracy of sight. Architecture, draughting, mechanical drawing, civil, mechanical and electrical engineering, chemistry in all its manifold ramifications, textile engineering, efficiency engineering, advertising, printing, dentistry, photography, all the trades, engraving, bookkeeping, expert accounting. In all these things success depends upon other things than hearing, and hearing is not essential.

But to successfully accomplish this result there must be early and careful planning by the parents, and efficient, persistent and painstaking instruction of the child from the earliest possible discovery of the existence of deafness.

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The sooner that the fact of serious impairment of hearing in the case of a child is discovered and bravely accepted, the better are the child's chances of ultimate success in life.

The longer the delay in arranging the child's life in accordance with the changed requirements made necessary by deafness, the poorer are the chances of attaining the highest possible success in that individual case.

It would be well if the early chapters of this book could be read by every young mother before her child is six months old. It is for the lack by parents of the knowledge contained in these chapters that many a deaf child reaches the age of four or five years without the full recognition, or at least the acceptance, of deafness on the part of the parents, and therefore suffers the loss of very precious and unrecoverable time.

As certain modifications should be made in the home life of a little deaf child the moment deafness is suspected, the earlier that the fact of impaired hearing is discovered and the proper training is begun, the better it will be for the child in after years.

I have said that the impairment of hearing in the case of a little child is a greater hin-

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drance than the same degree of deafness would be in an adult, or a young person who had previously acquired speech and some education. The reason for this is because comprehension of language and the ability to speak are acquired through hearing during the early years of life. If at this period of language acquisition the child cannot hear, he does not learn to speak and to understand what is said to him unless he receives very special instruction and attention.

The only reason why a deaf child is also mute is because the ear is the natural teacher of speech. Without that teacher, the child must be instructed in some other way.

So far as the organs of speech and all physical and mental equipment are concerned there is very rarely any reason why the deaf child should not learn to speak. He usually possesses perfectly normal speech organs and a perfectly normal brain. The only reason why he does not pick up speech and language like any other child is because he does not hear it and so cannot imitate it, nor correct his utterance when he makes sounds. The natural teacher and corrector, the sense of hearing, is lacking. Something must be supplied to take its place. Physically and men-

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tally he is entirely capable of learning to speak and to understand what is said to him, if only there was some way found of teaching him the meaning of the words and of correcting his attempts at utterance. The way has been found, and the necessary organizations exist all over the world for conveying to the deaf child the required instruction, but first of all it is necessary to educate his parents and friends in order that they may know what is possible and where and how to obtain it.

Curiously enough there exists in all parts of the world a certain feeling of shame on the part of parents toward their deaf children that they do not feel toward children having defects of sight, or of other organs. This feeling of shame causes the parents to try and conceal the facts and to keep the child out of public notice. Even when they become aware of the schools provided for the education of such children it is often difficult to persuade the parents to send the deaf child there. In this way they greatly increase the calamity and their own troubles.

There is no more real reason for such a feeling with regard to a deaf child than about a blind, or lame, child. Deafness is merely a handicap that must be overcome, and the

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sooner the task of overcoming it is begun the more perfect will be the results. Delay in the acceptance of the fact and in taking the necessary steps to remove its consequences so far as they can be removed, results in the loss of precious time that will never come again.

There is a certain period in human development for each phase of acquisition, and when that period passes without that part of the mental equipment having been secured, the task of getting it later is rendered much more difficult. This is especially true in the matter of speech and language. Nature has decreed, and for millions of years has been carrying out that decree, that speech and language shall be best acquired between the ages of two and ten. If those years pass without this acquisition then the difficulty of learning to speak and to understand language becomes vastly greater.

When deafness comes upon an adult, or young person who has learned to speak and understand language, it does not make a deaf-mute of him, though in the case of young children of ten or twelve special care must be taken if they become deaf or else there will be a serious impairment of speech and language. The adult, too, upon whom

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deafness has fallen, should give very particular attention to the matter of clear enunciation and the modulation of the voice in order to prevent unfortunate changes.

But in the case of the very little child the situation is very different. Then there must be a very great modification of procedure and treatment and training, both at home and in school, and that change should be begun at the earliest possible moment.

The first thing to do when it is suspected that the child does not hear perfectly is to consult the best ear specialist available. There may be something that medicine, or surgery, can do to improve the hearing.

In case a competent, well trained and experienced aurist thinks it worth while to treat the child, I strongly advise that educational measures be maintained at the same time. That this is both feasible and desirable, even in the cases of delicate children, has been amply demonstrated by experience covering many years. Such educational effort can do only good even if the doctor is successful, and if he fails, then very precious time will not have been wasted.

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Residual Hearing and Auricular Training

One of the things that should be begun the moment that any impairment of the child's hearing is even suspected is to make a very special point of speaking constantly to the child *quite near the ear* very clearly and naturally with good, full voice. I cannot lay too much stress upon this, simple and obvious as it may seem.

Over and over again during the many years I have conducted my school, children have been brought to me at six and seven years of age with very poor speech, or no speech at all, with very little language, or no language whatever, who might have had quite good speech and an almost normal vocabulary, if the simple device had been adopted when they were two years old, or younger, of constantly speaking to them clearly and strongly at a few inches, or, perhaps even less, from their ears.

These children have often come from homes of culture and education, yet their parents had not realized what lay easily within their power to do, for their deaf children.

The explanation of how such a thing can happen lies in the failure of most people to

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understand the natural result of the working of the perfectly well known law of sound transmission. This law is that the intensity of the impression that is made upon the hearing mechanism varies *inversely* as the *square* of the distance between the ear and the source of the sound. Put in household words the law is that a word spoken *one inch* from the child's ear makes *twelve hundred and ninety-six times* as much impression upon his hearing as would be made if the same word was spoken in the same tone a *yard* from his ear, since 1296 is the square of 36. The first distance away being one inch and the second thirty-six inches. The intensity also varies directly as the loudness, which means that if the word was spoken *twice as loudly* at the distance of an inch as it was at the distance of a yard, the impression made upon the child's ear would be *two thousand, five hundred and ninety-two times greater*.

Now a child may easily be so deaf that he cannot hear a word spoken in an ordinary tone a yard from his ear, and yet have a sufficient power of perceiving sound to hear that word quite well if it was spoken a little louder at an inch from his ear, since then it would make more than two thousand times greater impression upon his hearing.

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Since the ordinary distances of social intercourse in the home are more than three feet, and usually from six to ten feet, a little child with impaired hearing playing on the floor, or in his crib, does not hear what is said around him, not even when it is addressed to him. Not hearing, he does not learn to understand, and he does not begin to imitate the sounds of speech.

At first, perhaps, the parents and friends only think that he is "slow about talking," then that he is a little dull, and then that he is hopelessly deaf. And all the time that little fellow *may* have had a sufficient ability to hear sounds at very short range to have made it possible to train him to understand and to speak like other children if special care had been constantly exercised to speak to him very distinctly and with full voice very near his ear.

Over and over again we have begun this process when the child was finally brought to school and have gradually *taught him to hear*. This, however, might have been far advanced if the parents and friends had only adopted the proper procedure in his early infancy and continued it persistently.

In some cases that have come under my observation the child has had enough hearing

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so that, if this simple habit had been adopted by the parents he would not have needed to attend a school for the deaf at all, but could have gone on with his brothers and sisters who had normal hearing. In many other cases the hearing has not been sufficient to enable the child ever to depend entirely upon it, but it was of the greatest service in supplementing the use of his eyes in lip-reading, and in modulating the speaking voice.

During the past thirty-eight years I have had opportunities of observing pupils in the schools for the deaf throughout almost the entire world and I have been surprised to find what uniformity there is in the percentage of those pupils who have a usable degree of sound perception. It can be said with considerable accuracy to be one third, or 33 1/3 per cent. In most cases this hearing is not being used.

In a recent very accurate survey of a large state institution for the deaf it was found that this percentage was slightly exceeded, and that only 7 2/5 per cent. could be classified as "totally" deaf. As a matter of fact actual total deafness in children is much rarer than has been supposed, as a large number have slight remnants of hearing

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power which are not sufficient to be of any practical importance to them in life.

But whether the degree of hearing possessed is large or small, the procedure I am urging is sure to be helpful and valuable. Even when the ear specialist has pronounced the child to be totally deaf I believe it is worth while to make a point of speaking clearly and loudly very near his ear during his early childhood, for sometimes unobserved changes take place after the examination.

In as much as the eyes can be trained to supplement the imperfect hearing in the comprehension of speech, it is an excellent plan when a little child is so deaf that it is necessary to speak within so short a distance from his ear that he cannot see the face of the speaker, to carry on as much conversation with him as possible while he is facing a big mirror in which he can see the face of the speaker reflected while he listens to what is being said. We, ourselves, get much more assistance from our eyes in understanding speech than we realize, and the child will quickly learn to use both his eyes and his ear in understanding what is said to him. This will gradually lead him to always watch the

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lips of those speaking to him and little by little he will unconsciously begin to read the lips.

Of course there are, unfortunately, many instances in which the child is really totally deaf, but these are somewhat rarer than is generally supposed. During the early years of childhood, however, I firmly believe it to be advisable not to wholly abandon the idea that there may be some usable power of sound perception, and to proceed on that supposition, since the procedure is simple and only requires persistence and can do no harm, even though it does no good, and may have extraordinarily beneficial results.

Between the ages of twelve months and twenty-four months the child with perfect hearing makes rapid progress in learning to understand what is said to him, and by the time he is two years old has usually begun to speak many words and sentences in a more or less imperfect way. This has been accomplished principally by the mother's constant talking to her baby. If she has had the good sense to always speak in simple but complete sentences, and to avoid the foolish "baby talk" unfortunately affected by some people in addressing little children, the results of

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her daily and hourly talk is the possession by the child of a considerable vocabulary of words whose meaning he knows, and a less number that he is able himself to speak in a rather imperfect way.

In what respects should the mother modify her treatment of the baby if she suspects that his hearing is defective? She should not talk to him any the less on this account, but, on the contrary, she should talk to him more. She should, however, speak a little louder, a little nearer to him, possibly a little more slowly and distinctly.

Every opportunity should be seized to say to him, very near, or even in contact with his ear, the same words and sentences that would be spoken to him if he heard as well as other children.

Every day the mother should take him on her lap and show him picture books and talk to him about them, speaking clearly very near his ear. If she can sing, even a very little bit, she should hold him in her arms and sing to him each evening before he is put to bed, always having her lips very near his ear.

In fact, during his infancy, before there can be exact knowledge as to what is to be

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the condition of his hearing through life, everyone who has anything to do with him should try to present to him, at very short distances, exactly the same language, both in character and amount, that would be used with a child whose hearing was in no way impaired. This procedure can do no harm, as I have already said, and it may do a great deal of good in keeping alert any remaining power of sound perception which he possesses and in developing those areas of the brain that are connected with the hearing organ alone. Without use these powers would become atrophied, and possibly be lost, but by doing as I suggest they can be kept alive, and perhaps developed, so that when he has attained enough maturity to respond to the further tests which I shall later describe, he will be able to make the necessary effort.

It is highly desirable to know, at as early an age as possible, the exact facts with regard to the hearing and sight of every child, but especially so in the case of the child with impaired hearing.

For a physician to conduct a satisfactory test in his office of either hearing or sight of children two, or even three years of age, is practically impossible, and yet it is exceed-

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ingly desirable that the condition should be known with some approximation to accuracy at that age, if not earlier.

The mother can arrive at a truer estimate of the situation with such little children than can be secured by a physician in his office. In the matter of hearing, the routine tests applied by the otologist in his office are of but slight value in the case of very little children. The process is too long and requires too much patience to be carried out in the regular course of office practice, and it is impossible to get reliable responses from such young children in the tests with tuning-forks upon which the specialists so largely rely. It is very difficult to verify the truth of the child's indication that he hears the fork by air conduction, and when he is so little he does not grasp the distinction between the mechanical vibration which he certainly feels when the fork is placed against his head, in testing for "bone conduction," and the effect of the vibration which is conveyed to his brain by the hearing mechanism and there translated into what we call "hearing." He nods his head, smiles, and shows evident pleasure and perception, and the temptation is to say that he hears. He may, but then

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again he may only feel the physical vibration and would make the same response if the fork was placed against his breast bone, or knee, or his knuckles.

It is better, therefore, to slowly and systematically make our experiments in the natural environment of the home.

In this book we are principally interested in the state of hearing, but as the deaf child must depend to such a great extent upon his sight to aid and supplement his defective hearing, it is necessary for the parents to know that he sees at least well enough to enable him to learn to read the lips of those addressing him at ordinary social distances. I will, therefore, include a set of very simple and rudimentary tests of sight that can be applied to even a little child in his own home by his parents that will determine whether he sees sufficiently well for that purpose without the help of glasses or surgical attention. But as these tests cannot be satisfactorily made before he enters upon his third year of life they will be given when we reach that period.

While an accurate determination of the degree of hearing a child possesses cannot be made when he is only three, the parents can, with patience and persevering observation

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and test, arrive at a considerable knowledge in the matter even before that age, and I will suggest the procedure which has been found practicable. If, however, the following tests are first made before the end of the third year of life, they should be carefully repeated after that age, as more satisfactory results may be obtained when he is older.

We first wish to find out whether he can hear the human voice at ordinary social distances of from five to ten feet.

When the child is occupied, playing on the floor, or at a low table, take a position some ten feet behind him and call his name in a clear, strong voice, but without shouting. The greatest care must be taken to eliminate all other ways by which the child's attention might be attracted except by the sound of the voice carried through the air. See that in approaching you have not caused the floor to vibrate, or have made any other noise that might attract his attention. We are all very sensitive to the vibration of the floor, or the chair in which we are sitting, and the deaf child is especially alert to such sensations, as they are often his only warning of the approach of a person. See that there is no reflection of you in any door or window, or

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any other polished surface within his sight and that your shadow does not fall in advance of you and within his observation.

If he does not look around when you call him the first time, it is by no means certain that it is because he cannot hear you. He may have been so absorbed in his occupation that, at the moment, he was "psychologically" deaf, as you, yourself, often are to sounds about you when your mind is occupied, and, though the sound of your voice was received by his ear and transmitted to his brain, it did not result in consciousness. Sometimes, too, when he has caught you at it several times, he thinks it is a game, and purposely fails to respond, in a spirit of playfulness, or contrariness.

Neither, on the other hand, is it a sure sign that he heard you even if he did look around when you called. There may have been a shadow or a reflection that attracted his attention, or you may have caused the vibration of the floor, or his chair, or have made some sharp little sound other than with your voice. Or he may have *just happened* to look around at that instant, as not infrequently occurs.

Whether he looks around, or not, on the

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first test, the experiment should be repeated many times with the same care to shut out all other possibilities except the sound of your voice.

If you are thoroughly convinced that he does hear your voice when you call his name from a distance of ten feet, then continue your tests at increasing distances till you reach the limit beyond which you cannot get his attention by air conducted sound alone.

When you have determined this distance, then make other tests at ten feet, but not so loud, until you know just how loud you have to speak at ten feet to make him hear.

If you have convinced yourself that, at a distance of ten feet, he does not hear you when you speak his name strongly, but without shouting, then gradually reduce the distance. I have already spoken of the enormous rapidity with which volume of sound that reaches the ear is reduced as the distance is increased. A slight reduction of your distance from his ear is the same as greatly increasing the loudness with which you speak.

If you finally find that you have to get so close to him that you cannot make the tests without his first knowing that you are going

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to do so, then you should modify the method a little. For success in these further tests a little more maturity is required than the child has at two years of age, and the attempt to arrive at a more accurate estimate of his hearing should be postponed a few months, or even till he is over three.

In the meantime, however, we shall not proceed on the supposition that he cannot hear at all, but shall use many exercises directed to his ears in the hope that he can, or will learn to, perceive at least some sound.

If you have found that at a distance of ten feet, or less, you can attract his attention by means of the voice alone, you can, if you wish, continue your experiments a little further and try some other vowel sounds. You can use the words, "car," "coat," "cake," "key," instead of his name. I mean, using one of these words at a time. It is quite likely that you will find he does not respond to some of these words at as great a distance, or as readily, as to others of them, since the vowel sounds they contain have different "carrying" powers. He may hear the word "car" more easily and at a greater distance than the others, and the word "key" least well of the four. This would be because the vowel sound

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of the word "car" is the most "open" of the vowel sounds in the four words and makes a greater impression upon the ear than the vowel sound of the word "key" which is the most "closed" of the four.

You can also experiment a little in the matter of pitch of sounds that he hears, by trying him with a man's voice and a woman's, or a child's. Also by using a whistle giving a low note and another giving a high note.

No great stress, however, should be laid upon the use of whistles, or bells, because our great reason for interest in his ability to hear is in connection with his ability to hear the human voice in conversational tones by means of which we can help him to learn to understand what is said to him and, later, to speak himself. The ability to hear a shrill whistle, or a very deep organ note, or a telephone bell, or other sound higher or lower than the range of the voice is not of great service to us in our educational training of the child, and so not, at present, of much importance.

If the experiments have proved that he can hear spoken sounds at a distance of four feet, or more, everyone about him should take the greatest care to speak to him always in a clear, strong voice within the distance at

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which he can hear. This will greatly help him in learning to understand and, at the proper time, to speak.

It would be worth while, also, to try whether he seems to get any pleasure from listening through ear tubes to a phonograph, and if he consents to listen for a few minutes at a time, it will be of value to provide him with daily chances to do so. He may also get pleasure from putting his ear against the case of the piano when it is being played, and in some forms of deafness there is a perception of sound by means of the teeth resting against the case of the piano or organ.

Sense Training

But there are other things that parents can do for the little deaf child during the first two years of his life. He needs to have his other faculties developed in order to supplement his imperfect hearing. He needs to be taught to get much information through his eyes and so needs to be trained to observe and distinguish differences that other children do not need to bother about. He also needs to be given special opportunities to develop his lungs and voice if he does not hear well enough to imitate the other children when they shout and call to each other.

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The child whose hearing is seriously impaired will need to make demands upon his other senses that are not required when hearing is unaffected. He needs to train his powers of sight, observation, muscular control, recognition of vibration and imitation, to perform as many of the functions of hearing as is possible.

Not being able to hear the sounds of speech at ordinary distances he must train his brain to associate ideas with the series of movements of lips and face that accompany speech. Not having the natural corrector of his own speech, that is the ear, he must develop a sensitiveness to vibration and a conscious control of muscles whose action is usually not under the control of the will.

The foundation of this super-development can be laid even in this early period up to two years of age, though the specific training must be postponed till greater mental and physical maturity has been reached.

Of course any effort to develop the child along the desired lines must take the form of play in order to secure the coöperation of the baby.

The guidance of his play into activities that will lead in the direction desired is

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rendered easier if he can be supplied with some of the more rudimentary of the Montessori materials and the simple materials of the kindergarten, and his use of these purposeful playthings can be guided by the mother in such a way as to attain the results required for his future progress.

It would be well if the mother could inform herself, by a little reading and study, of the intended purposes of the various materials and the method of use recommended.

Some of them, as, for example, the two or three different sets of Montessori cylinders, can be turned over to the baby for his unsupervised amusement, and by his natural tendency to experiment and investigate, he will arrive at the proper use of them and derive the benefits they are aimed to give. The same is true of some of the flat "inserts" of the Montessori outfit, but there are other articles in this set and in the kindergarten materials that can be best used, at least at times, under the careful direction of the mother teacher.

Such, for example, are the colored wooden beads for stringing and the colored wooden blocks for building. These can properly be given to the child at times merely as toys,

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but they can profitably be used at other times as a means to cultivate habits of careful observation, imitation and obedience.

When the child amuses himself by stringing the beads he is guided by his own invention and whim, and that is useful in developing initiative and muscular control, but if the mother will sit down with him and make a game of stringing them with him and train him to watch each movement that she makes and do exactly the same thing himself, picking up a bead as she picks one up and of the same color and shape, inserting the string as she inserts it, pulling down the bead as she pulls it down, and then repeating the operation in exact imitation of his mother, she will make a beginning of training his power of observation, of attention and concentration, of imitation and obedience, a high development of which will in later years be of inestimable value to him in overcoming the special difficulties that lie ahead of him.

The same is true of the colored blocks. When they are given to him as a toy he uses them as his fancy and invention suggest, but they can also be used as valuable training material for the above-mentioned qualities.

The mother seats herself at the little

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kindergarten table with the baby and places before each of them the same number of blocks of the same shape and colors. She then takes, we will say, a square, red block between her right forefinger and thumb and gets the baby to do *precisely the same*. She then deposits the block in a certain position before her, and has the baby notice where it is and put his own in exactly the same relation to his own position at the table. Accuracy of observation and imitation is the crux of this exercise. She goes on with some simple design of arrangement or building, leading the child to follow every motion and every position accurately and promptly. Simple as the exercise seems, the mother will be surprised to find how much patience and attention it will require on her part to secure the degree of accuracy and perfection that is required to make the exercise of value.

The good old game of "follow your leader" is of value in the training of the child to observe, pay somewhat prolonged attention, and obey the will of another. It can be played as a romping and running game, or as a quiet table game with plaything materials. The points to be observed being the carefulness and accuracy with

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which the following is done. The slightest variation should be noticed and corrected, since that is the immediate purpose of the game.

The sorting out of wooden objects by touch alone, the eyes being blindfolded, is an amusing and useful exercise. It can be extended to the recognition of any object. For example, place on the table before the child a fork, a spoon, a knife, a coin, a top, etc., etc. Blindfold him and place in his hands one of the objects, say the top. Then make him pass his hands over the collection on the table till he again finds the top which in the meantime you have placed with the other things.

Remember, in dealing with the little child of two, or younger, that his physical and mental powers are as yet but imperfectly developed and that all his playthings and exercise objects should be ample in size and no exceedingly fine discriminations should be asked, or expected of him. Use large blocks, large beads, easily distinguished motions and actions.

I hope I may have said enough on this phase of his training to set the mother thinking along the right lines and that she will use her own ingenuity and initiative in the manu-

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facture and use of materials to aid him in developing his powers of observation, attention, imitation and obedience. Oftentimes those devices that are worked out by the individual mother in coöperation with her child are of even greater interest and value than the ones suggested to her, or supplied from a shop.

There is another reason for the advisability of giving the little deaf child special sense training exercises besides the necessity of preparing his faculties to do things not asked of the hearing child. This is that, because of the lack of hearing, he is deprived of the greatest single factor in mental development, namely, the intelligence awakening power of language.

Only very rudimentary thought and exchange of thought is possible without a command of language, and it is in the acquisition and use of language that a child gets the greater part of his mental development.

In order that a deaf child may acquire language and gain the mental growth that comes through language he must have more special and individual attention than is required by the hearing child. He will not just "pick up" language as the hearing child

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does, without conscious effort on his own part or that of others. Language must be carefully and clearly presented to his sight, either in the form of the movements that accompany speech, or in the form of writing and print.

Therefore, he not only needs special training of the tactile, motor-sensory, sensory and visual senses to enable him to acquire language and speech through a different channel than that of the ordinary child, but he also needs a special presentation of the problems of language and speech if he is to overcome the restrictive effects of deafness.

We must not only specially cultivate in him the powers of visual observation and memory, muscular consciousness and conscious muscular control and a delicate tactile sense, but we must see that language, in all its forms, is presented to him so clearly and copiously that he will gradually acquire a vocabulary.

Lip Reading

I have given precedence and special prominence to the possession of some power of perceiving sound because it is, when possible, the easiest and most natural means of accomplishing our ends; but not much more, if any,

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than a third of the children whose hearing is seriously impaired will retain a usable ability to hear the sounds of speech even at the shortest range.

The other two thirds will have to be taught without any aid from the ear, and these present our most difficult problem.

When we are able to work through even a very defective sense of hearing we are working along the same psychological line that has been followed by untold generations and we have in our favor all the inherited tendencies that have been developed throughout the ages. It is the natural, and therefore the least resistant line.

But when we must teach the child to speak and to understand spoken language through other senses than the accustomed ones, and must develop his mind without the aid of the greatest of all the senses usually involved in that development, that is without the sense of hearing, we have presented to us a problem that nature has not solved, though she has provided the means by which man's ingenuity has been able to solve it. If left to nature, the deaf child never learns to speak or to understand speech, and never attains the full measure of his capacity for mental development.

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Even when the child proves to have retained a modicum of hearing sufficient to be made of some use to him, only a fraction of the cases has enough hearing to become independent of the other senses in acquiring speech and understanding of speech, and to be able, at six or seven years of age, to get what is required through the ordinary educational facilities provided by the community for hearing children.

The others, while enjoying the advantage of some imperfect hearing, must still depend largely upon other means of comprehension for much of their intercourse, and in the acquisition of much of their education.

With the increasing mental maturity that comes with added age we can, as the child becomes two and a half, three, and three and a half years old, increase the number and complexity of the exercises for training his brain to associate meaning with sounds and also to associate meaning with speech movements as well as to perform those movements himself.

A large, low mirror will be a most valuable adjunct to the home schoolroom both in the auricular and the speech exercises. In all probability in order to have the sounds of

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speech heard as clearly as possible it will be necessary to speak so close to the child's ear that he cannot see the face of the speaker. Even in the comprehension of spoken language the eye is a great help to the ear, and in learning to utter the words it is a necessity, while the ear, when it can be used, is of the greatest service, even though there is not enough clarity of hearing to learn to speak by means of that alone.

It will be a great help if all these exercises can often be given while seated in such a position that the child, by looking in the mirror, can see the face of the speaker clearly at the same time that he is listening to what sound may reach him. The auricular exercise then serves the double purpose of a lip reading exercise as well, and the very best possible lip reading exercise at that. The procedure also has the very desirable effect of training the brain to use the ear and the eye simultaneously, making the one supplement the other in a perfectly natural way as they supplement each other in the case of every person, hearing or deaf.

It is much easier to speak naturally, without undue exaggeration of speech movements, when addressing the ear than when

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the speaker thinks he is not being heard, but is only being seen. Hence the lip-reading practice that the child gets by this mirror observation of language addressed to his ear is more certain to be practice in perfectly natural speech.

In connection with the effort to teach speech and correct pronunciation through the aid of imperfect hearing, the information that the child gets from looking at the speaker in the mirror at the same time he listens to the sounds is of immense value. Then, when the imitation stage is reached and he begins to attempt, himself, to utter the words that are being used, he easily glances at his own lips and quickly learns to observe his departures from the positions and movements of his teacher. Many repetitions and trials gradually bring him to the ability to correct his visible errors and it is all done in the natural manner without the necessity of introducing an artificial and difficult process.

It is rare that this use of the mirror in conjunction with speech will wholly solve the problem, but it will always be of very great help.

Care must be taken in locating the mirror, the child and the teacher, to secure the best

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possible light on all concerned and the least casting of shadows and obstruction of view.

It is needless to say that, in order to secure the greatest skill in interpreting sound there must be some exercises that are not given in conjunction with the mirror, but placing entire dependence upon the ear. Also that there must be other exercises in which the full responsibility is placed upon reading the speech by sight, without any help from the ear.

The idea, in the minds of some persons, that permitting the use of the imperfect ear in connection with lip-reading reduces the ability to read the lips, and also that the teaching of lip-reading leads to increased deafness through reduction in the use of the hearing and resultant atrophy, has been exploded by actual demonstration. The facts in the case are quite the opposite, both in children and adults. The bringing into play of the eye to help out the imperfect hearing leads to a greater participation in social intercourse and an increased, instead of a decreased, use of the remaining hearing, since even the slightest perceptible murmur is of the greatest assistance in the interpretation of speech by the eye, and the brain easily

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acquires the ability to see and listen at the same time, and strains to add hearing, even though very slight, to the information obtained by sight. The acquired ability to help out the eye with the ear, on the other hand, makes lip-reading so much easier that there is much more practice and therefore much more rapid progress in facility.

In addition to these advantages is that of a more symmetrical mental development. There are areas of the brain that can only be reached through the ear. If no sound can be conveyed to the brain, then those areas remain smooth, white and undeveloped. Brain development is wholly visual, muscular and tactile, therefore lopsided. Sometimes this cannot be helped, but when it is possible to reach the brain through even a very imperfect sense of hearing and so develop those areas and make them capable of functioning it is scarcely necessary to call attention to the desirability of doing so.

I have devoted a great deal of space to the matter of possible power of sound perception because I consider it of great importance and also because it might easily be overlooked, but I must not allow the impression to be gained that the child with seriously impaired

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hearing, though with a slight remaining power of short range perception of sound, will ever be wholly independent of the comprehension of speech through the eye by means of so-called "lip-reading."

Even if we are ultimately successful in training his imperfect ears to catch language by sound, it will perhaps be only at such short distances that in much of the intercourse of life he will need to understand what is said to him by watching the face of the speaker, with little or no help from his ears.

Keeping this in mind we must, therefore, always conduct our work with him in such a way as to give him all the practice possible in learning to associate ideas with the movements that accompany speech.

While spoken language has been developed through long ages with reference exclusively to the ear, it has been discovered that there is enough visible movement of the speech organs to enable the brain of a deaf person to learn to interpret those movements in terms of the same ideas that the ear gets from the sounds that accompany the motions of lips, tongue, cheeks, palate and larynx.

In order that a child may learn to understand the meanings of words and sentences

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he requires many repetitions of them under circumstances when their meaning can be inferred by the conditions that surround their use. He does not learn to know the meaning of a phrase the first, or second, or third time that it is used to him or in his hearing. Nor does he remember it permanently the first time when he comes to understand its meaning. It requires many repetitions to fix it in his memory for good and all. He also requires to hear it more distinctly while he is learning its meaning than is necessary after it has become familiar to him.

Furthermore, if he hears correct language he learns to understand, and later to use, correct language, while if he hears incorrect language he becomes familiar with what is incorrect.

Exactly the same things hold true of the deaf child who is learning to interpret the movements that accompany speech as are true of the hearing child learning to interpret the sounds of speech.

But the deaf child has the more difficult task for several reasons. To begin with, since spoken language has been made to fit the ear it is not as easy to distinguish between the speech movements of different

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sounds as it is between the sounds themselves that result from the movements. To the ear it does not matter whether the producing actions are similar if the sounds are sufficiently different to be readily distinguished.

Unfortunately the appearance of the positions that result in widely differing sounds are often closely similar. Nevertheless it has been amply demonstrated that, given long practice in observing minute differences and a considerable knowledge of a language by means of which the proper one of two possibilities can be selected, a deaf person can acquire such skill in interpreting spoken language by merely seeing the face of the speaker and without hearing a sound, that it is perfectly accurate to call it "hearing by sight."

While, as I have said, it is not possible to see speech as clearly as one can hear it, the brain of a deaf person can be trained to supply the things unseen by a process of inference from the things seen through a knowledge of what must also have been there in addition to the things seen. It is really a process of scientific guessing unconsciously guided by fixed principles.

For a deaf person to acquire the highest

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skill of which he, individually, is capable, demands an early start in life and a vast amount of practice. Therefore it is very desirable that he may begin his practice as young as possible, and the moment there is any suspicion of impaired hearing we should modify our intercourse with the child along the lines indicated by the likelihood that he will have to depend largely upon his eyes in the comprehension of what is said to him.

The first thing to be arranged is that he shall see the words when they are spoken, and see them well. That means that there must be a good light on the face of the speaker and not in the eyes of the child. The speaker needs to be with his face to the light and the child with his back to it.

Unlike the ear, which perceives vibration without a conscious directing toward its source, the eye cannot perceive a thing unless it is consciously directed toward it and focussed upon the object.

We can talk to a hearing child when he is not looking at us, but we cannot communicate with a deaf child when his eyes are not upon our lips.

So our first task is to help the little deaf child to watch our lips as continuously as

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possible. He is not going to do this spontaneously. He must be led to discover that he gets some satisfaction from seeing our faces when we speak to him, and we must induce him to form the habit of always looking at our lips when he wants to get information from us.

A little child's glance is like a butterfly flitting swiftly from one spot to another and never remaining long on anything. To speak to him when his eyes are not focused on our lips is useless, therefore we, too, have a habit to form, the habit of keeping our eyes on his and reserving our speech till his glance rests upon our faces.

We shall have to direct his attention to our lips many times as we speak his name and that of his father and mother and brothers and sisters before his little mind retains the impression caused by the sequences of speech movements that accompany those names and he learns to recognize them when we speak them. The names will have to be spoken in his clear sight very often and always when there can be no question as to what the word means, before he will have fixed them in his memory as always referring to the same person. But when he has learned to recognize

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the spoken name of himself when he sees it, he has taken the first great step toward comprehension of spoken language by means of sight, and has learned that there is something to be gained by watching the lips of a speaker.

His own name and the words "father" and "mother" are an excellent trio to begin with. Do not use "mama" and "papa," because these two words are almost impossible to distinguish between by sight alone, though their sounds are so different. It will also be found that "mother" and "brother" are not easy to tell apart, so his brother's name would best be used instead of the word brother.

The group of letters, p, b, m, are similar in appearance upon the lips, as will readily be discovered if you will look at yourself in the glass when you say pa, ma, and ba. They all start with shut lips that open for the vowel.

The same thing is true of the letters t, d, and n, as they all are formed by placing the tip of the tongue against the roof of the mouth just back of the front upper teeth. Therefore the words tea, Dee and knee cannot be distinguished by sight, though in a sentence it probably would not be difficult to know by the requirements of the sense which one was spoken.

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There are many other unexpected and puzzling similarities in the appearance of sounds that are widely different in their appeal to the ear, and if a word that you know is familiar is not recognized, when spoken, it is quite possibly due to some unsuspected variation between its audibility and visibility.

I will take this matter up a little more fully later on, but what I have already said will serve to direct the thoughts of the reader to the pitfalls that beset the way of the lip-reader, young or old.

There is another fundamental matter that must be emphasized at once in connection with this question of training a deaf child to interpret spoken language by means of sight.

Let us ask ourselves what object we have in this effort to train the brain of the child to interpret speech by the eye without hearing the sounds.

There can be but one answer, namely that we wish to enable him to understand what is said to him by any person who may have occasion to speak to him, in spite of the fact that he cannot hear the words.

In order to perform any such mental feat he must have a vast amount of practice.

Suppose we wished to train the brain of a

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hearing child to understand what was said to him in French. We would see that he heard French spoken very often and very well. We would not practice him in listening to Greek if we wished him to learn to understand French.

Avoid Exaggeration of Speech Movements

Now if we wish the deaf child to learn to understand what people say to him we must give him an immense amount of practice in seeing people speak and the people who are giving him practice must speak as the other people will speak with whom he later wishes to converse.

It is an invariable tendency of every person who attempts to speak to a child known to be deaf to grossly exaggerate the movements of speech in a mistaken idea of making it easier for him to understand. This exaggerated speech is as unlike the natural speech that he will meet in the street, shop and general social intercourse, as Greek is unlike French, and his practice in it will do him just as much good in training him to understand natural speech as practice in hearing Greek

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would do him in learning to understand French.

Put in this way it is easy to see the absurdity of such a procedure, but that is the way that hundreds of people, teachers and friends and parents, speak to deaf children in all parts of the world.

As a matter of fact, long experience has proved that it is just as easy for a child to learn to understand natural speech as it is to learn to understand the awful mouthing that is so frequently offered to him as speech.

Such exaggerated mouthing is not only unnecessary, but it also defeats utterly the purpose of all the labor and time that is being expended on the training of the child to associate ideas with movements instead of sounds.

Everyone that has anything to do with a deaf child, whether it be in the home or in the school or in the social world, should swear allegiance to the motto, "Be Natural" and should carefully follow this motto in speech, in gesture, in action and in general treatment of the child. The more that we depart from naturalness in any phase of our association with the deaf child, the more he in turn will depart from naturalness in his growth, development, and character.

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Avoid Gestures

There are other things to be kept in mind in our efforts to train the deaf child to "read our lips." One of them is that the eye can look at only one thing at a time. If we want him to see our lips clearly we must not distract his attention by other simultaneous movements of our arms and hands in gestures and gestural signs accompanying speech. It is easier to see the wide movements of the arms and hands than the smaller movements of speech and the child will ignore the speech and only watch the hands if he has the choice. Throughout all his educational period he will take the line of least resistance, just as you yourself did when you were young, and perhaps do to this very day.

Furthermore the eye is quickly wearied by the necessity of constant and rapid changes in distance and the resultant need for constantly changing the focus. This means that in speaking to a deaf child we should keep our heads still; not bob them up or down, or from side to side, or move about while talking to him. Cultivate repose in manner and quiet utterance unaccompanied by wind-milling gesture and meaningless movements of the head.

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See that the light is good and that it comes from behind the child and falls on the face of the speaker. Speak naturally, though not rapidly. Keep your head, hands and body quiet.

This matter of gradually training the child to use his eyes in the understanding of speech should be kept unceasingly in mind from the moment that impairment of hearing is suspected, whether the discovery is made before he is a year old, or long after. The more promptly that your intercourse with the child is modified in such a way as to aid him in the acquisition of ability to interpret the significance of speech movements the more fully will he eventually attain the maximum skill of which he is capable.

It will take some time for you yourself to form the habit of constantly watching his eyes when you are communicating with him, and for him to form the habit of watching your lips whenever he is trying to get information from you, or you are trying to give it to him. But unremitting effort and never failing patience will ultimately bring a worth while reward.

I cannot lay too much stress upon the advantage it will be to the child if all the per-

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sons with whom he associates will carefully cultivate the habit of always watching his eyes, and each time his gaze is fixed upon their faces, of saying to him whatever words or sentences they think will express the idea that is in his mind at the moment. This habit of speaking to him only when he is looking at the face of the speaker, and of always speaking to him at such times, is a hard habit to form, but a most helpful one.

The family can easily agree upon a considerable vocabulary of simple, common, useful words that are to be used with the child at every possible opportunity. It would be a good thing to have a list hung up somewhere in the house of the words and phrases agreed upon for the month.

Such words as his own name and those of his brothers, sisters, uncles and aunts. The words father, mother, baby, doll, pussy, dog, horse, good boy, naughty, hat, cap, hot, cold, heavy, light, hard, soft, rough, smooth, coat, shoes, stockings, come, go, fast, slow, up, down, mild, bread, sugar, salt, butter, dish, saucer, cup, knife, fork, spoon, sorry, happy, broken, never mind, all right, after awhile, very soon, love mother (with a hug) mother loves.....(with a hug), where is

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.....?, tie your shoe, bring the doll, etc., etc.

Little by little, as he sees these words spoken day after day, *when the ideas they represent are in his mind*, he will come to associate the *face movements* that he sees accompany them when spoken with the thoughts they express in just the same way that the hearing child gradually comes to associate the same ideas with the *sound* of the words.

The constant use of the word "come" instead of a beckoning gesture, the word "father," instead of some gestural sign that you, or the child, may have invented to represent his father, saying "roll the ball to mother" instead of going through the motion of doing so, the daily and hourly use of these and other words and phrases accompanied by a gentle insistence that he look at you when you say them, will by and by bring to him the unconscious habit of observing the lips of those around him and the ability to comprehend the meaning of many things that are said. This lip-reading vocabulary will grow slowly but surely as he himself matures and he will become a lip-reader without knowing how he acquired the art.

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If, as often happens, you have formed the habit of communicating with the little deaf child wholly by gesture, before you had this matter of lip-reading presented to you, there will be the added difficulty of breaking up the undesirable habit already formed, but it can be done, and, if you want the child to depart as little as possible from normality, it must be done. "As the twig is bent, the tree is inclined" and if you want him to grow up with spoken language as his natural medium of thought and communication instead of the language of gestural signs, you must begin his training early along that line. It requires strength of character on the part of parents and friends to refrain from the often easy means of a gesture or sign and use the more difficult and slower medium of speech, but, the desired goal can only be reached in that way and in after years all concerned will be profoundly grateful that there was the strength of character and foresight to insist upon it.

Diet and Training

Careful attention must be paid, also, to his physical condition. He must go to bed early; sleep in a room with plenty of fresh air; have a properly balanced diet with more green

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vegetables and fresh fruit and milk than meat, no pastry and very little candy and that only immediately after meals. He must have regularity in his stools which can be assured by frequent prunes and figs. A quiet twenty minutes should follow each meal. He should drink water freely between meals.

Important as bodily condition is in the life of any child, it is particularly important to a deaf child for demands will be made upon his physical powers, especially upon his nervous system, that exceed the demands usually made upon the hearing child. He needs, therefore, even more than other children, to be in the pink of physical and nervous condition.

Teach him to eat all vegetables and fruits, to drink milk and to like soft boiled and poached eggs. I use the word *teach* advisedly for I have seen so much of the foolish whims and notions concerning food that parents have allowed to develop in their children, yielding to the unwise and usually momentary wishes of the little one. Provide meals at regular hours, properly spaced. Very simple, wholesome food. Nothing between meals unless it be a slice of bread and butter or ripe fruit, or a glass of milk.

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Do Not "Spoil" the Deaf Child

He must be trained to prompt obedience and a proper regard for the rights of others. There is a natural tendency to "spoil" a deaf child in an effort to make up to him for his misfortune. This is a mistake, for, by very reason of his handicap he must always, throughout his entire life, be a little better than the other fellow in order to compete with his hearing companions. He must be a little more polite, a little more obedient, a little more considerate, a little more industrious, a little more observant and a little more efficient, or an employer will choose a hearing man instead of taking, or keeping, him. The friends that he would like to have will be hard to get unless he comes up to this higher standard. All this should be kept in mind during the formative years of his childhood by those who are responsible for his training.

There is a strong, and a not unnatural tendency to maintain an attitude toward the deaf child that differs from that maintained by sensible mothers toward their other children. They often set up a different standard of conduct and of obligation for the afflicted child. His brothers and sisters are taught to always defer to his wishes; even to the extent

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of yielding to improper and selfish demands on his part, and conceding that they have no rights where he is concerned. He is not required to perform the little duties demanded of the other children. He is given privileges which the others do not, and which no one of them, including himself, should enjoy. He grows tyrannical, domineering, and selfish. The mother says: "Poor little chap; he has trouble enough, we must do all in our power to make up to him for what he misses by reason of his deafness." This is, however, a short-sighted, and really a cruel policy. It lays up much misery for his future, and in the end proves a serious handicap to one who needs to have as few additional difficulties as possible. Though it may seem hard-hearted, it is really kinder to put him on the same basis as any other child. Make him do everything possible for himself. Insist upon his being independent; dressing himself as soon as he is able, lacing his own shoes, and performing all the little self-help acts that the wise mother demands of all her children. Make no distinction in the treatment accorded him. Ask the same services, reward right actions and punish wrongdoing as impartially as if he was not deaf, only being sure that he

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clearly connects the punishment with the wrong act. This, in the case of a deaf child, requires a little more care than with a hearing child. Train him to be thoughtful for the comfort of others, and respectful of their rights, just as you insist that the others observe his rights. He cannot be argued with, object lessons and example must be the means of teaching him manners and morals.

He should have constant opportunities to play with other children of his own age, and special attention should be given to see that he is taught the simple rules of the games so he can play them properly. He should be made to give in to others and to yield to each his proper rights.

He should have games to develop his lung power, such as blowing soap bubbles, feather foot ball, which consists in standing at one end of a sheet held about as high as his mouth while some one stands at the other end and each tries to blow a feather over the opposite end of the sheet; egg football in which an empty egg-shell is used for a ball and two saltcellars at each end of a table form the goals through which the egg-shells must be blown; hide-and-seek, where the hider *calls* when he is ready.

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Speech Teaching in Due Time

It is perfectly natural that the uppermost thought in the mind of a mother is the desire to have her little one begin to speak. I shall take up that matter in due time, but unless the child has a considerable ability to hear and responds to the early tests of hearing readily by trying to imitate the sounds that are made to him, it is unwise to put any stress at present upon the matter of his speech and better to devote every effort to the teaching of an understanding of some things spoken to him and to the awakening of observation and attention. In doing this we are only following the order of nature in the regular progress of all hearing children. The hearing child spends the first two years of his life in listening and observing things about him with little, or no attempt to express himself in spoken words. Understanding must, of necessity, come before speaking. During his first two years of life the hearing child learns to understand much of what is said to him though he could not possibly speak the things he understands when spoken to him.

Impairment of hearing does not shorten this period of listening. On the contrary, it lengthens it. The mother of a little deaf child

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must possess her soul in patience with regard to this matter of speech, for the ear is nature's teacher of speech, and when that organ is defective other and artificial means of teaching speech must be found and the use of these requires a considerable development on the part of the child, and special knowledge and experience on the part of the teacher that is not usually possessed by the mother.

In course of time a beginning can be made in the work of teaching even the totally deaf child to speak and I will give all the assistance I can to the untrained mother, but that should not be attempted yet.

CHAPTER II

THE THIRD YEAR OF LIFE

Testing the Sight

WITH the beginning of the third year most children have attained enough maturity and development to permit of making tests and giving educational exercises that were not possible earlier.

An attempt might now be made to roughly test the sight and make sure that there are no defects serious enough to prevent the reading of lips at distances of six to ten feet.

Dr. A. B. Reese, an eye specialist in New York, has very kindly suggested a modification of a standard test that is used with adults who do not know how to read. This is based upon the letter E printed in various sizes and in four positions. In testing an adult the patient is asked to indicate by a wave of his hand whether the open side of the E is toward the right, the left, upward, or downward, but Dr. Reese suggests that, in the case of so little a child, it might be better

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if he were supplied with a letter E cut out of cardboard and taught to place his letter in the same position as that which was shown him at a distance.

If at a distance of twenty feet the child required the testing letter E to be nine centimeters high and nine centimeters wide in order that he might be sure which way it was placed, then he would have one tenth of normal vision.

If at the same distance he could distinguish the position of the E when it was only nine tenths of a centimeter high and nine tenths of a centimeter wide, then he would have normal vision.

For our purposes it will be sufficient if we have two sizes of the E, one of nine centimeters square, and one of .9 (nine tenths) of a centimeter square.

Of the largest size one should be made for the child to hold in his hand.

The letters here printed are of the proper sizes and can be copied exactly by cutting similar letters out of black cardboard.

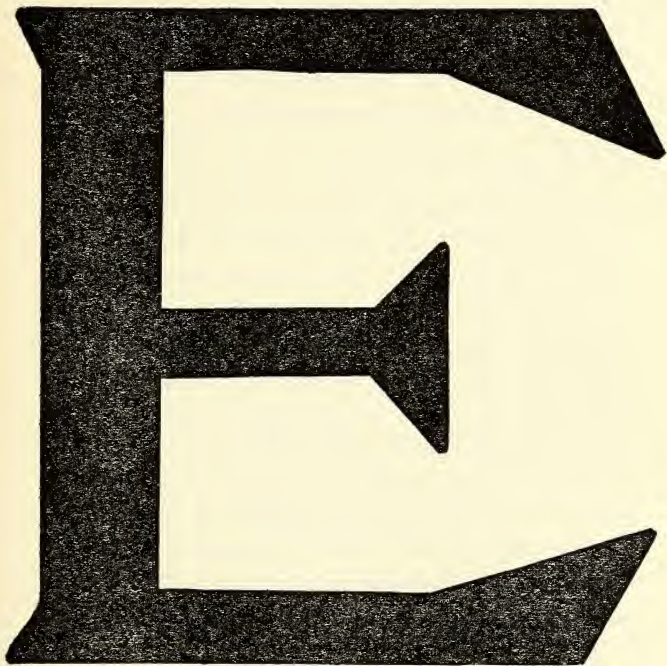
With so little a child the tests must be presented to him as a game that he will like to play. In order to show him how the game is to be played, his elder brother, sister, or

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E

If the child can distinguish this letter clearly in all positions at a distance of twenty feet he has normal vision.

If it is necessary to bring it to ten feet he has one half of normal vision.



If the child cannot distinguish this letter clearly at more than twenty feet he has not more than one tenth of normal vision.

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hearing playmate, can first play the game while he looks on. When he has watched the proceedings for a very little while he will be quite ready to play the game himself.

On two pieces of white cardboard exactly six inches square paste the two different sized letters E in such a way that each letter is exactly in the center of each card, its edges equally distant from the edges of the card so that you can hold the card any side up and the only way anyone can know which way you are holding it is by the position of the E.

With the children seated twenty feet away, hold up the card on which is pasted the largest E and have the hearing child who is playing the game put his big E in the same position as the E on the card. Then, with the card hidden from the sight of the children, change its position and again hold it up to view, asking the hearing child to place his E in the new position now occupied by the E on the card. Change the position of the E several times till the little deaf child seems to have at least partly understood what you wish, and then let him take the big E and put it in the position he sees on the distant card. When he is able to arrange his letter correctly in imitation of the position as he sees

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it on the card, you can repeat the same process with the smaller size.

You probably will not be able to keep his attention on the game very long but you can return to it another day and in course of time you will be able to determine whether he is able to see even the smallest letter distinctly at twenty feet. He will enjoy it if you will sometimes change places with him and let him show the cards and you arrange the letter. He will also be amused if you occasionally make a mistake and his noticing it will show that he is seeing and observing.

If you find he is not able to clearly see the smallest E at twenty feet you can bring the card to ten feet. To be able to see the smallest E at ten feet would indicate one half of normal vision, but that is more than enough for the purposes of lip-reading at ordinary social distances. In fact if it was necessary to bring the smallest E to within five feet of his eyes in order to have him see its position clearly, he would still see sufficiently well to learn to read the lips without glasses, but as soon as an oculist thought he was old enough to be properly examined and fitted with glasses it would be well to have the matter attended to.

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Further Sense Training

The cultivation of his muscular sense and his sense of sight and touch can be carried further now that he is older.

The games of imitation can be extended to exercises that cultivate somewhat finer muscular control by piling blocks, balancing them on thin bits of wood and by adjustment of toys. In time it will be possible to extend this observation and imitation to positions of the lips by sitting in front of a big mirror and playing the game of "follow your leader" by leading the child to place his lips in the varying positions taken, and held by the mother. In this game care should be taken not to make extreme faces or exaggerated positions, for this exercise will eventually have a real bearing upon speech.

The discrimination between weights, that is pairing up two similar objects of the same weight from a lot of them that look alike but weigh differently is a valuable one for the little deaf child, also sorting by texture through the sense of touch alone, the eyes being blindfolded. Material for this texture game can easily be manufactured at home from duplicate bits of cloth of different textures varying from fine muslin and silk to

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coarse burlap and canvas. Also with pairs of similar cords of different sizes and twists. A set of duplicate squares of sandpaper of different coarseness make a useful test of tactile ability.

For weights one can buy some of the small rubber balls sold in any toy shop and force into pairs of them the same number of bird shot. The balls will look alike, but weigh differently.

Exercises for the lungs, such as blowing soap bubbles, paper windmills, feathers along a sheet, the egg football as described below, shouting games should all be continued.

The game of "Egg Football" is an amusing and useful exercise for development of the lungs.

"Blow" an egg, that is make a small hole in each end of the shell and blow out the contents so as to leave the egg practically whole but empty.

Clear the dining-room table and set two salt shakers about six inches apart at each end as the goals for your game of egg football.

The more children that are available for the game the more fun it is. Station one side, or "team" at each end and along the sides.

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Place the empty egg-shell in the center of the table. At a signal the game begins which consists in blowing the egg through the goals. Perhaps it resembles hockey more than it does football as the ball (the egg) is driven by the breath between the goal posts and not over a bar.

Some simple voice exercises can be added, such as saying "Ah" as long as possible, and again as many times as possible with one breath. It will serve to induce him to try if he can say "Ah" with one breath and also how many times he can say "Ah" without taking breath.

You can teach him to inhale as deeply as possible and then exhale slowly. Also to accompany this inhalation and exhalation with slow movements of the arms. Holding them straight out in front of him to begin with and slowly moving them backward as he inhales and letting them slowly drop as he exhales. Then inhaling quickly through the mouth as the arms fly back and saying "Ah" as the arms slowly drop to the side, prolonging it as much as possible.

These exercises have a bearing upon his speaking later on.

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The training in distinguishing different vibrations can go further now. While he holds a guitar, or a zither, resting on the palms of his hands, his eyes being shut, or blindfolded, pluck a bass string. Then let him find the vibrating string when he opens his eyes. Repeat the process and pluck a string of high note and again let him find it. Little by little he will learn to make finer and finer distinctions and he will like the game, though he probably will not care to play it long at a time. The same thing can be done with the piano, or an organ.

The next step is to place his little hand upon his mother's chest while she makes as low a tone as she can, then makes as high a tone as she can, and he learns to indicate, either by some gesture, or by, if he will, his own voice that the tones feel different. Do not let him clutch his own throat or chest. It is not necessary. He can feel vibration in his own body without the aid of his hands and it is better that he should.

More Lip-Reading

The exercises in lip-reading can also be further elaborated now, and such sentences included as, Shut your eyes. Open your

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mouth. Shut the book. Open the book. Shut the door. Open the door. Shut the box. Open the drawer. Laugh. Cry. Shout (Ah). Whisper (Ah, without voice). Laugh loudly. Laugh softly. Cry loudly. Cry softly. Point to the window. Point to the door. Point to the table. Point to the floor. Clap your hands. Fold your arms. Run. Walk. Skip. Jump. Hop. Run slowly. Walk fast. Walk slowly. Run fast. Hop and jump. Hop and skip. Skip and jump. Hide the thimble. Find the thimble. Hide the pencil. Find the pencil. Hide the brush. Find the brush.

If it has been found that the child has some, even the slightest power of perceiving the tones of the voice, then these exercises can be used for both auricular training and lip-reading. In using them for auricular training they should be performed part of the time before the mirror and part of the time without the mirror.

Continue to show him picture books and talk with him about them with lips close to his ear. Part of the time while seated before the mirror with the child in your lap.

Further Tests of Hearing

If in your tests for possible small degrees of hearing you have found it necessary to get

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very close to his ear, and even then have not succeeded in getting very definite and reliable responses, he is now old enough to be taught a set of responses that can be used to determine whether he really does hear, and to a certain extent, how much and what he hears.

We will begin with something we know he does perceive. When his back is turned to you, touch him lightly on the shoulder once. Then teach him to touch you—once—. Touch him twice in quick succession and teach him to touch you—twice—, in the same way. Then touch him three times in rapid succession and get him to touch you in his turn, three times. In a short time he will grasp the rules of the game and he will respond to your touches by touching you as many times as you touched him. You have now given him the idea that when you do something, he is to do something the same number of times. Touch him once, twice, three times, in varying order, till he never fails to respond with the same number.

Now place your lips within an inch or two of his ear and say "Ah" loudly, twice, thus "Ah—Ah." If he happens to respond by making some sound it will be very nice, but probably he will not. If he does not, then

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get him to touch you twice, as he did when you had touched him. Then say "Ah" once and have him touch you once. Then say "Ah" three times and have him touch you three times. Continue this process till you are sure he has the idea that you wish him to touch you as many times as you make the sound, or until you are convinced that he does not hear the sounds you are making. You may have to put your lips actually in contact with his ear and in that case he might easily merely feel the mechanical vibration without actually hearing, but it is desirable to do this in order to fix in his mind the idea that you wish him to make a varied response according to the varied impression which he receives.

If he can be induced to make a sound as many times as you make a sound there should be a careful avoidance of any attempt to correct his sound and make it like the one you uttered, for that would confuse his mind as to your present object. All we want at the moment is to know whether the effect of the sound we have uttered has reached his brain. For the present we do not need to know with what degree of accuracy it reached him. Do not forget that the effect of the sound upon

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the ear diminishes with enormous rapidity as the distance from the ear increases.

In testing a child who is really totally deaf, without any power of sound perception even at actual contact with the ear, he will usually endeavor to "play the game" and make a sound each time he thinks you made one and will vary the number as he thinks will satisfy you. It then becomes a case of pitting your wits against his and so varying the number of times the sound is made that he cannot *guess* even 75% right, and keeping a record for a sufficiently long time to eliminate the possibility that he is guessing and not hearing. Make a mark above a line each time he gets it right and below the line when he is wrong and do this day after day until you are certain that the times he gets it right are due to actual hearing of the sound you made.

If you find that the range is so short that you cannot make the sound more than three or four inches from his ear, you will have to interpose between your mouth and his ear a sheet of paper in order to prevent him from feeling the puff of breath against his cheek when you speak and judging from their number rather than from hearing.

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In conducting these tests it is necessary to remember that the success of the child in hearing the sounds depends upon his LISTENING, and that listening is a mental process, not a physical. It means paying conscious attention, and that means *effort*. We all weary quickly from mental effort and a little child wearies much more quickly than older persons. When he ceases to *listen* he becomes psychologically deaf and the effect is the same as if he was physically deaf. His little mind is like an electric battery, it "runs down." The battery rings the bell well for a time, but if we press the button too long the ringing becomes fainter and fainter till it dies away entirely. But if you remove your finger from the button and allow the battery to rest a few minutes, it recovers and when you press the button again the bell rings once more. This "polarization" of the battery is well understood, and perhaps the mental fatigue that results in loss of attention and listening power may come from some similar chemical reaction in the brain, and the effect of rest in restoring the power of attention may be like the passing off of polarization in the battery.

Whatever the explanation may be, it is a fact that must be recognized, that the child

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will not be able to "carry on" in the tests more than five or six minutes at a time without a lowering of his listening efficiency that will give the same effect as increased deafness. There should, therefore, be frequent intervals of rest and diversion to enable him to recover his keenness of listening.

Then, too, there is the matter of the division of his attention. When one is very deaf it requires great concentration of attention to perceive the imperfect sounds that sift through the defective mechanism. In the case of a little deaf child it is an unaccustomed effort and the things he is watching for are unfamiliar and so less easily recognized. Everything unites to require his most concentrated attention. If there are many interesting things going on all around him that he wants to watch, or if anything distracts his attention from the thing you wish him to do, the effect is to lower his listening power and the result is the same as increased deafness. It stands to reason that the tests should be carried out in a quiet room where as few disturbing elements are present as is possible. Sometimes I have found it a good plan to make a sort of blindfold game of it and either to hold my hand over his eyes

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while making the sounds, or to tie a handkerchief over them for a few minutes. In other cases this, in itself, seems to distract attention and has not been of value.

Sometimes he is not interested and "just won't listen," or his little mind is so full of other thoughts that he has no attention left for what you are trying to do with him. Then, even if he had normal hearing, he would be "psychologically deaf" and the results would be the same as if he were actually deaf.

This matter of "psychological deafness" is one very familiar to us all, for we are all sometimes "psychologically deaf." Perhaps you are accustomed to work in a room with a clock that chimes the hours and the quarters. How many times do you hear that clock as it strikes or chimes? Are there not many occasions when you have not heard it for an hour or more, though you know it must have chimed and struck several times? How much of what goes on in the noisy street outside your window are you aware of while you are at work?

It is necessary to keep all these things in mind in our efforts to arrive at an accurate knowledge of the power of sound perception

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possessed by a little child, and it is not difficult to understand why a satisfactory result cannot be obtained by even a comparatively leisurely examination in the consulting room of a specialist.

If we have proved to our satisfaction that the child can hear enough to tell how many times a sound is made near his ear, our next problem is to find out what sounds of speech he can hear, and at what distances, and with what loudness they must be uttered.

What is Our Principal Interest in Hearing?

But before we discuss a method of reaching a reliable conclusion with regard to this, let us consider what is our real object in all this labor, because there may be more than one way of conducting the investigation, and it will be wiser to choose that procedure that will not only tell us how much and what the child can hear, but also start him along the proper road to the necessary mental development and normal attitude toward sounds that will enable him to understand spoken language when he hears it.

Our primary use for hearing is to understand what is said to us, but in order to

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understand we need something more than perfect hearing. We need to acquire an understanding of the meaning of the groups of sounds that are called words and sentences.

The object of all our efforts on behalf of the little deaf child is to put him into communication with the people around him. If by touching the deaf child with a magic wand we could restore to him perfect hearing power he would not at the same moment receive the power to comprehend what was said to him, for, not having heard up to this time, for, let us say, the first three years of his life, he has not acquired a knowledge of his native language.

If you, who have entirely normal hearing, were suddenly picked up by some magical force and dropped down in central Africa among a people whose language you had never heard, you would be unable to understand what was said to you and could not make them understand your speech.

For the moment you would be like a deaf and dumb man and would have to resort to gestural signs to supply your immediate needs. But if you stayed among those Africans for a time and listened carefully to their speech under conditions when you could in-

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fer from the situation what was the general subject they were speaking of, you would gradually come to understand what they said and be able to express your thoughts in their language. But the process by which you accomplished this would be a mental one and not one of developing your hearing power. Your perception of sound would be no better after you had learned the language than it was when you first arrived, but your brain would have learned to associate meaning with the sounds of their speech that at first were without meaning to you.

Now in dealing with the deaf child in this matter of auricular examination and training we may proceed on the supposition that we are going to develop in him a power of perceiving sound which he does not at the moment possess, or we can consider that he already has some power of hearing, but so limited, in amount and range, that he has never found it of any use to him in the acquisition of speech and the understanding of spoken words.

If we set out to attempt to create a power of hearing in the child that he does not have when we begin our efforts, our method of procedure will be quite different from that which

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we would adopt if we were aiming to make of use to him a slight power of sound perception that he already has and has had since birth.

In more than thirty-eight years of close association with the education of deaf children I have been forced to the conclusion that but very little can be accomplished in the line of creating a power of perceiving sound that the child does not possess by nature. But I have also fully demonstrated by many successful accomplishments, that a very great deal can be accomplished along the line of training the mind of the very deaf child to associate ideas with the limited and imperfect sounds that can be conveyed to his brain by proper presentation to his imperfect hearing mechanism.

Auricular Training for Comprehension of Language

Therefore I strongly advocate that all effort be concentrated upon teaching the child to *listen to sounds for the purpose of getting ideas* and not merely for the purpose of perceiving sound.

Even in our preliminary examination to determine how much and what the child can hear, I advise so conducting the exercise as

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to keep him in the mental attitude toward sound of trying to get some *thought, or idea*, from what he hears.

I would not use meaningless sounds or syllables, or musical instruments, or noise-making apparatus, or devote time to pitch and inflection in the early stages. After we have so far progressed as to have given the child a hearing vocabulary and so have put him into actual spoken communication with others, then we may devote some time to the less essential refinements of auricular training.

So, having determined that the child can hear enough to be reasonably sure how many times the sound "Ah" is uttered behind his back and a few inches or more from his ear, or from his best ear, if he is able to perceive better with one than the other, I no longer make use of meaningless sounds and syllables, but select actual words that contain the sounds I wish to experiment with, and that are the names of objects that I can easily bring to the notice of the child.

In the early tests we need to select sounds that are so widely different that it would not require very acute hearing to distinguish between them. The three sounds of "broad ä,"

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“long ē,” and “long ō,” as contained in the words “car,” “key” and “comb,” will serve the purpose admirably. We could also use the sounds of long ī, long ō and ou, as in the words eye, nose and mouth, for either group meets the requirements I described. The meaning which the English language assigns to these groups can be easily made clear to the little deaf child if we have before him a toy railroad car, a toy automobile, a key and a comb. He, himself, can supply the needed eye, nose and mouth.

The first group, car, key and comb, are particularly well adapted to our purpose because they each begin with the same explosive consonant, have sufficiently the same length and would be very difficult to distinguish unless the actual vowel sounds were perceived as differing from each other. We wish to eliminate, as far as possible, all means of distinguishing between the things we say except the actual perception of the difference in their sound.

Even supposing that the child is able to distinguish at once between the three words so far as hearing is involved, he would not be able to know their meanings until he has been

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taught them, for that is purely an arbitrary matter with the English language.

We will, therefore, place the three objects before him on the table; the little car, the comb and the key. Then we will say the word "car" loudly and clearly some ten or twelve inches from his ear, and point to the toy car on the table. Then we will do the same with the comb and the key.

Even though he may be a very bright little chap and have quite enough power of sound perception to distinguish between these three words, it will take a number of repetitions before he is even moderately sure which one you named. It is an unaccustomed mental exercise for him. He is beginning the acquisition of language. He is also just beginning to learn to LISTEN.

In a few minutes he will tire. His listening power will decrease. His mental battery will "run down." He will apparently grow deafer. But a few minutes of rest and diversion will enable him to recover and again he will tackle the problem with renewed zest.

As the work develops and gradually becomes a little more of a grind, and loses its novelty, it may be advantageous to introduce some artificial stimulus to attention, such as

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the reward of a tiny bit of candy; a sugared carroway seed serves nicely. But for some time at the start I have never found it difficult, by showing *great pleasure* at the smallest success and *no discouragement* at failure, to secure enthusiastic cooperation on the part of any child.

Five or ten minutes at a time, and two or three times a day, is enough of this for a week. When he can distinguish with considerable success between car, key and comb, no matter in what order they are spoken (and it will be necessary to pit your wits against his to see that he really listens instead of guesses), you can use eye, nose and mouth, and later you can combine the use of the six words, but do not expect him to distinguish as yet between nose and comb, or between car and eye and mouth with anything like the success that he distinguishes between car and nose, or between either and key, for the sound of the vowel e differs more widely from those of ä and õ than the latter do from each other.

For the double purpose of assuring yourself of the results you are getting and of stimulating the child's interest and ambition, it will be well, after a time, to keep a

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record. Take a sheet of good-sized paper and at the top write the child's name. Then at the upper left hand corner write the day, month and year and the words used. Then below draw a horizontal line.

Divide this line into two equal parts by a short vertical line and above the left half write the word Left and above the right half write Right, meaning left and right ears. Consider that all marks above the horizontal line to the left of the vertical indicate correct results in the left ear, while all marks below the line on that side indicate errors. Similarly the marks on the right of the vertical show results in the right ear. It may look something like this:

JOHN SMITH

November 25, 1927.

Car, Key, Comb.

	Left	Right
Correct	////////	///
Wrong	////	////////

This would mean that in the tests made on November 25, 1927, using the words Car, Key and Comb, the child gave the correct reply six times out of ten when the words were spoken close to his left ear, but only three

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times out of ten when they were spoken near his right ear. That is, on this occasion the test showed a success of 60 per cent. in the left and 30 per cent. in the right ear.

Such a record for a single day has little or no value, but the average of such records for a month would have very great value. On a single day the child might not have been well, or he might have been distracted, or he might have been naughty, or he might have had a cold in the head. In fact, there are so many things that might account for such a record, even in the case of a child with a considerable power of hearing, that very little weight can be attached to any small number of records. The average, however, of a large number of tests can be accepted as very reliable.

When another group of words is desired, the numbers "three, four and five" will serve nicely. Then "John, James, George" could be used, with pictures of boys to represent each.

If the child is able to show an average of 75 per cent. of correctness in distinguishing between any, or all, of these groups, in one or both ears for a period of a fortnight of exercises twice daily, it is certain proof that the time will be well spent that is required

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to teach that child a hearing vocabulary, even though his range of distance is not over an inch.

Then a beginning can be made in the use of short sentences instead of single words. These sentences should be chosen so that it is not too difficult to distinguish between them, and also so that the child with no language in which to express himself can, nevertheless, definitely indicate whether he heard the sentence.

Such sentences as "Open the box," "Open the door," "Open the seed" and later "Shut the box," "Shut the door," "Shut the seed," "Touch your ear," "Touch your nose," "Touch your mouth," "Touch my ear," "Touch my nose," "Touch my mouth." For some time only one group should be used in a test, in order not to so complicate matters as to make the exercise too difficult and discourage the child. As soon as progress in recognizing the words and sentences is such that it seems safe to combine them and use more than three in an exercise that can be done. The danger is in going too fast and getting beyond the depth of the child so that discouragement works against success by

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reducing the intensity of his effort in listening.

It will be observed that in these exercises we are training the child's ear to discriminate between differing vowel sounds, but never creating the mental attitude of listening for sounds but *only for ideas*; that is, for words and sentences that have a meaning which he can understand and indicate his understanding of. This is a very important point, for our object is to cultivate the normal attitude of people toward hearing, which is to obtain ideas by means of it, and so to get into communication with others.

There are instances of seriously impaired hearing where only sounds of high pitch can be perceived, and others where only those of low pitch are heard. If these powers of sound perception lie within the range of the speaking voice they are of value, but if above or below that range in both men and women, I do not consider it worth while to spend time in trying to make the hearing useful, as there are so many other more essential things that the deaf child must learn than merely to perceive sound when no language significance can be attached to it.

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Sometimes it happens that the lower voice of a man is better heard by the child than that of a woman. In such cases it would be well to have the exercises given by the kind of voice that is best perceived. In order to determine whether the child that is under consideration happens to be one of these instances it is always well to have the exercises given occasionally by a man and at other times by a woman, choosing voices that are quite widely apart in pitch but both strong and clear.

CHAPTER III

THE FOURTH YEAR OF LIFE

DURING the fourth year of the child's life there should be a further extension of the type of exercises outlined for the previous years. They can be somewhat increased and elaborated, as he is now more mature.

If there is believed to be a usable degree of hearing, even though at very short range, the list of words, phrases and sentences taught should be greatly enlarged.

If it has become apparent that there is no ability to hear, the same increased number of words, phrases and sentences should be used as exercises in lip-reading.

The sense training exercises should be continued but made more difficult by leading the child to discriminate finer differences of vibration, texture, form and weight; the recognition of less widely differing tones when touching the piano, or other musical instrument, and his mother's chest when she sings high and low notes. Further effort

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should be made to get the child to make sounds of higher pitch when he feels a high tone, and lower pitch when he feels a low tone. But in these exercises he should be trained to observe the feeling of vibration in his own chest *by thinking of what he feels there without putting his hands upon himself*. It is much better not to let him form the habit of using his hands to feel his own voice. That is not necessary, and if this habit is permitted in the beginning it soon limits his perception and distracts his attention from the real sensations in his own body, and also leads to unnatural and undesirable gesticulation. The child can never have too much contact with his mother, for it is only by touch that he can perceive that vibration accompanies her speech, but he does not need to use his hands upon himself, and should not be trained, or allowed to do so.

He can now be taught the idea of number and to read the names of small numbers from the lips. The beginning should be made, of course, with similar objects. Put before him a block and say "one." Then two similar blocks and say "two." Then three blocks and say "three." Repeat this with pennies,

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pencils, spoons, anything. Little by little you will see the idea of number taking shape in his mind, and by and by if you put a pile of blocks in front of him and speak the numbers he will pick out the number of blocks that you call for. Gradually you can extend this teaching as far as nine, but there it would be well to stop for the present.

Even in one-third of the cases of children with seriously impaired hearing where there is found a small degree of usable perception of sound, a very considerable portion of the educational training must be conducted without the aid of this hearing, and in two-thirds of the cases the entire education must be given without assistance from the ear.

The one great thing that must first be accomplished is the giving to the child an understanding of language. Without this nothing else can be attained. Early in the process of language acquisition a beginning can be made in teaching him to speak, but *speech on his part must follow comprehension of language when used by others*, and for a long time will, of necessity, lag behind his understanding of language spoken and written. This lag is not peculiar to the deaf. It is exactly the same with hearing children.

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They comprehend what is said to them long before they are able to say the same things themselves, and even well along in their lives they will be able to understand what they hear spoken and see written, but will be unable to express the same things themselves.

When we can enjoy even a slight assistance from the ear in this process of teaching language, it is a great help, but we shall always have to resort to other devices to fully accomplish the task.

Learning to Read

The sooner it is possible to teach the child to read the quicker will the problem of language acquisition be solved. Not much can be done in this matter before he is four years of age, but a small beginning can be made as he enters upon his fourth year by a play device which I will describe.

We must remember that to the child everything that he sees written or printed will for some time be merely a variety of pictures. He can at the start do better if written or printed words are presented to him merely as pictures and not as composed of letters. In other words, it is better to begin with

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wholes rather than with parts, that he must, by a mental process, combine into wholes.

Take a piece of white paper and in clear, simple print, not less than three-eighths of an inch high, make slips containing the words "Table," "Chair," "Box," "Boat." Make two slips of each. Paste one slip on a bit of cardboard and paste the other on the object itself.

Give one of the cardboard words to the little fellow and lead him to the corresponding object and show him that the two pictures, the one on the bit of cardboard in his hand, and the one pasted on the object, are alike. Then give him another and again take him and show him that this picture is like the one on another object. Next go back to your own place and give him one of the two bits of cardboard and get him to take it to the object that has the same picture pasted on it. I use the word picture instead of word because that is what it is as yet to the child. He studies it just as he studies any other picture and fixes its appearance in his mind as a whole, not as a thing made up of letters.

Continue this game at intervals till he is able without error to match up the cardboard slips with the appropriate objects. He

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will like the game but, like all other games, it will not be interesting long at a time. He will, however, be quite willing to come back to it another day, and little by little the number of words can be added to till he has quite a little vocabulary that he recognizes at sight.

Other words than the names of objects can be added to the list, such as "Run," "Walk," "Jump," "Hop," "Kiss me," "Hug me," etc. Then a slip can be made "Walk to the" and he can be given it together with another slip saying "Chair" and taught to walk to the chair, table, window, etc., and to "Run to the," "Hop to the," etc. Another slip can be made "Bring me the" and this together with the slip "Box" can be made to teach him to bring you the box. Add Hair, Teeth, Brush, Brush your hair, Brush your teeth.

It will be very helpful if, after a few of these actions represented by the printed slips have been well learned, you teach him that the phrase "Bring me the box" when spoken by you is the same thing as the printed slips, and teach him to bring you the box whether you speak the sentence to him or hand him the two slips.

In time you can make other slips that contain the whole sentence on one bit of card-

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board, "Bring me the box." The limitations of this game can only be determined by the age, maturity, intelligence of the child. Do not, however, carry it along too fast to be thoroughly understood and retained.

When you first try it you may find that the child is as yet too young for such an exercise. Do not be discouraged. Lay it aside for six months and then try it again. The same may be equally well said of any of the exercises that are described here. A child arrives progressively at the stages in his development when he will take an interest in and perform certain mental and muscular exercises. If something is presented to him too early he does not make a success of it. For example, the first set of the toy called "mechano" which was given to my little son came to him before he had reached the "mechano" stage of his development. He played with the bits of metal in an aimless sort of way, but would not try to carry out the definite designs explained in the accompanying book, nor would he make any successful objects on his own initiative. When a year later he got another set he made much more intelligent use of it, and when at nine years old he got one of the more elaborate

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sets he busied himself for hours in making the most elaborate things, both from the printed directions and out of his own head. He had then reached the "mechano" stage of his development.

There can be no sharp line drawn between the period preceding four years of age and that between four and six, but as four is approached and passed, a maturity is attained that makes possible many exercises that could not have been used before.

The length of the lesson period can then be extended, perhaps to an hour twice a day, one in the morning and one in the afternoon, saving the more enjoyed exercises and occupations for the last. What these exercises are that the child prefers will vary somewhat with the individual and can only be determined by experiment and observation.

Learning to Speak

The successful teaching of a totally deaf child to speak English is so technical a task and requires so much preliminary knowledge and experience on the part of the teacher, and it is so easy to do more harm than good by forming, or permitting to be formed, wrong habits of articulation, that I hesitate

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to suggest the undertaking of this task by the untrained mother.

If she has been working with the child along the lines already outlined and the child is fortunate enough to possess even a little power of sound perception a beginning will already have been made by the child in speaking. But if deafness is complete, little, or nothing, will have been accomplished as yet toward intelligible speech.

It would really be much better if, having been taught what has been explained up to this point, the totally deaf child who is four and a half, or older, was placed in a special school for the *oral* education of the deaf, or under the instruction of a trained teacher of the deaf in his own home.

It is not possible by means of the printed page alone to teach any one how to teach speech to a totally deaf child. The utmost that I can do here is to point out a few things that the untrained and inexperienced can safely do, and a few other things that cannot be done safely.

It must be remembered that the *sounds* of the letters of the alphabet are quite different from their names. For this reason it is undesirable that any attempt should be made to

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teach a little deaf child to "say his letters." That is to say what we call his A B Cs, as this only leads to unnecessary confusion in his mind. For example, the *name* of the letter M is "Em," but its *sound* is merely the hum that results when we make voice with our lips closed. The *name* of the letter F is "Ef," but its *sound* is only the slight breathy noise that occurs when breath *without voice* flows out of the mouth while the under lip rests against the lower edge of the upper teeth.

In the beginning, all speech teaching effort should be confined to those sounds and combinations in which the positions of the speech organs, the lips, tongue, teeth, etc., while uttering them are most easily seen. No attempt should be made for a long time to teach the sounds of K and G, or the distinction between them, or the distinction between P and B, or T and D. The sounds of S, and of long E, as in "feel," L and R, are also difficult to teach and no struggle should be made over them.

If the mother teacher will content herself with efforts to get the child to make the sounds of the letters M, N, V, F, B, P, W, Th, th, Ä (Ah), Ä (Aw) (as in "awl" or "for"),

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Ō (Oh), Oo, Ow (as in "owl"), Ŭ (as in "up"), together with such rough approximations as the child may be able to manage by imitation of Ī (as in "ice"), Ā (as in "ace," or "way"), Oi (as in "oil," or "boy"), and the various combinations of these sounds, she can accomplish a good deal and is least likely to do harm.

The universal word for mother, the world over, is "mama" because that is what results when a child opens and shuts his lips while uttering voice. It is composed of the simplest and easiest sounds and is an unconscious utterance. The sound of it is produced, as I have said above, by the hum of voice with lips closed, and if the jaw is dropped loosely a little way and the voice continued the vowel Ä (Ah) results. This repeated gives "mama."

To test your ability to do what you are told with your tongue and lips I will set you some exercises.

Exercise 1.

At the same time while saying a prolonged Ah draw *in* the corners of your lips slightly and see what change that makes in the sound you are uttering.

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Exercise 2.

Now, while uttering voice in this new position, with the corners of your lips slightly drawn in, also draw your tongue back ever so little.

Exercise 3.

Next, while making this last sound, please round the lips a trifle more and draw the tongue back still a little further.

Exercise 4.

Now, while continuing this last sound, please round the lips to a little smaller pucker and see what sound comes.

Exercise 5.

Then, while continuing that sound, make the lip opening so small and tight that the voice can hardly squeeze through.

Exercise 6.

Now, alternately, make this last sound and the slightly looser sound that came before it. First one and then the other, several times *without stopping the voice.*

Exercise 7.

Now say Ah and while saying it, and without any stopping of the

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voice, change the shape of the lips to the round, slightly puckered form of the fourth exercise, and repeat this two or three times.

Exercise 8.

Again, while keeping your voice going continually without any stop, begin with your lips in the last, tightest position as in exercise 5, and gradually open them till you are saying Ah, then, still without stopping your voice, go back to the shape of your lips with which you started.

I would like you to go through with these exercises several times before reading any further, and please impress upon your memory what the sounds (or noises) were that you made the first few times you attempted the exercises, for I want you to be able to compare them, and the facial action which accompanied them, with some sounds that I shall ask you to make later.

CHAPTER IV

FOURTH YEAR CONTINUED, AND FIFTH YEAR

UNLESS you were much more successful than the cultured and intelligent people upon whom I tried those exercises before putting them in this book, you made some very funny and unnatural faces and some queer sounds while struggling to do as you were told. You opened your mouth much too wide at times; you twisted your lips into strange contortions; you forced your tongue back till it was a hard lump; your facial muscles became tense and your voice was strained and sometimes high, perhaps even "breaking" in a funny squeak.

If you did not do some, or all of these things while trying to go through the exercises the first time, you are to be highly congratulated, and if you did do them you need have no feeling of annoyance.

The experiment of trying to consciously control organs which ordinarily work unconsciously, should be a very helpful one to you,

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for it will give you a clearer realization of the difficulties under which the deaf child labors while learning to speak, and a more perfect understanding of why he is inclined to make such queer sounds and faces in his efforts to do what you ask of him. He, just like yourself in the case of the above exercises, makes too great a physical effort in trying to take the speech positions.

It is exceedingly difficult to *consciously* make the very delicate movements of tongue and lips that are *so easily made unconsciously under the guidance of the ear when there is no thought of muscular control.*

Now let us see how those exercises would have come out if you had been able to produce them with the aid of your ears and your knowledge of speech.

Please say Ah and then Aw (the first part of the word "all," that is, stopping before the "L" sound is given. Say them gently and naturally without effort, or exaggeration, in the most conversational tone. Say them two or three times, without stopping between the syllables, that is, with continuous voice, smoothly and softly.

If you will observe the movements of your lips you will see that they do just what I

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asked you to do in exercise 1. You will also notice, if you observe closely, that in changing from Ah to Aw you draw your tongue back ever so slightly.

Go back now and try those first exercises over again with the fact in mind that they aim to produce the natural utterance of the two sounds Ah and Aw. How does your performance now compare with your efforts when I first gave you the exercise? Are you exerting as much effort now as before? Are you making faces, or queer sounds? If so you are not doing the exercise correctly. When correctly done the result will be the conversational utterance of the vowel sounds Ä (Ah) and À (Aw).

Exercise 2 was merely À (Aw) very quietly uttered.

Exercise 3 was Aw Oh

Exercise 4 was Oh Oo

Exercise 5 was Oowoow.

Exercise 6 was Woowoowoo.

Exercise 7 was Ow (as in "How").

Exercise 8 was Wow.

Now if you observe yourself carefully you will notice that if, while uttering the vowel sound Ä (Ah), the lips are very slightly

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drawn in at the corners, which protrudes them a trifle, and the tongue within the mouth is drawn backward very, very slightly, the sound of Ä (as in "all," "awl," "or") is made.

If the lips are rounded a trifle more than for Ä and the tongue within the mouth is drawn still a little further back, the sound of Ō (Oh) will be heard, and a slight further reduction of the rounded lip opening and a little more drawing backward of the tongue will result in the sound of Oo. If, while saying Oo, the opening of the lips is reduced still further and is made so small that it really impedes, slightly, the flow of the breath, and the voice is continued, the *sound* of the letter W will be made, and if this very close orifice is alternated with the slightly larger one for Oo by gently relaxing the lips, the word "woo" will be uttered, and one can get a very good idea of the difference between the W and the Oo. If the reduction of the lip opening is carried still further to the point of actual closing, and the voice, which can now no longer escape through the mouth, is allowed to pass out with the breath through the nose, the sound of M will be made, and if this closed position is alternated with the

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slightly open one for Oo and the voice is continued the word "Moo" will be uttered. If the *closed* position of the lips is alternated with the more open one for ō you will hear the syllable "mo" "mo" "mo," and this might excusably be accepted by the mother from her little deaf child as a request for "more" of something, without attempting to complicate matters by struggling to complete the word.

You will notice that in the unconscious position of rest (while reading this, for example), your teeth do not quite come together, though your lips do. You will also notice that the edges of your tongue lightly touch the entire horseshoe formed by your teeth and the upper surface rests gently against the roof of your mouth. It is in a position that will serve perfectly well for the *sound* of M, not its name Em, but the little humming sound. If you will only part your lips slightly and make voice without changing the position of the tongue you will make the sound of the letter N (not its name En). You will notice as you do this that the breath and voice come out through your nose just as they did when you made the sound of M with your lips closed. If you alternately close and

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part your lips while uttering continuous sound without moving your tongue or teeth, you will make alternately the sounds of M and N.

If, while you are uttering the sound of N, you will allow your tongue to drop from the roof of your mouth without stopping your voice, you will be saying Ä (Ah), and if you let your tongue alternately lie softly against the roof of your mouth and then fall away, *without moving your teeth or lips*, while your voice continues, you will find yourself saying Nah, Nah, and if you will do the same with your tongue while your lips are slightly pursed in the position previously described for Ä (aw), or more pursed and rounded for Ō (Oh), or still more pursed as for Oo, you will find that you are saying Naw, Naw, or No, No, or Noo, Noo. The last syllable might be accepted for the word "new" or "Knew." You will also notice that as you change from Nah to Naw, to No to Noo the tongue is drawn back into the mouth a very, very little more each time.

By a little careful and *gentle* patience you will find you can get your little child to do these same things and utter the same sounds more or less accurately. But I cannot urge

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you too strongly not to exaggerate the movements, or *to permit any strain, either in yourself or in the child*. The moment there is much muscular effort, or any exaggeration of movement, the hope of good speech is gone. You know by observing your own speech how slight muscular exertion is involved in the small movements that you make.

Another thing I must impress upon you is that it is not possible to *show* the child in your own mouth the *natural* positions of the speech organs in normal speech. In order to enable him to see, you have to open your mouth unnaturally and place your tongue, etc., in positions quite different from those they occupy in *natural speech*. Yet, with his meager language, you cannot explain to him that you do not want him to imitate you. It is necessary to be able to explain to him the things that you do, without his being able to see what you do, and that requires a maturity of mind on his part and an understanding of language that he has not yet acquired, as well as an accurate knowledge on the part of the mother teacher that cannot be acquired by reading alone.

It is for this reason that the speech teaching that should be undertaken by untrained

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and inexperienced persons working with little deaf children of six, or less, is very limited, and must be confined to those things that can be made clear without exaggeration and distortion.

The teaching of the "breath" and the "stop" consonants takes the untrained mother teacher into more difficult ground which should be entered cautiously and not very far.

Perhaps the easiest of these sounds are the th and f, but I think it is better to teach their vocalized mates, th and V, first as, in my opinion, much smoother and better speech is ultimately attained if voice is used in the earliest efforts to speak. For that reason I urge all professional teachers of speech to the deaf to postpone the breath and stop consonants, such as (th, f, s) (p, t, k) till the corresponding voiced consonants have been learned, viz. (th and z, v) (b, d, g).

The sound of the letters th, as in "thin," is a "breath" sound, that is, it is not accompanied by voice; whereas the sound of the same letters as in the word "then" is vocalized, that is, it is accompanied with voice.

To follow the teaching of the vocalized form, as in "then," by teaching the unvoiced

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sound, as in "thin," is an excellent way of developing in a deaf child the consciousness of his own voice and a recognition of the feeling in his own body when he uses his voice. It is a comparatively easy sound to teach because the positions of the organs are quite visible even when uttered naturally. The tongue rests gently between the almost closed teeth and protrudes a very little. The teacher should take this position, as if she was going to say "then," and hold one of the child's hands against her chest while she holds the back of his other hand close to, but not touching, her lips. If she then starts her voice without moving her tongue or lips she will utter the sound of vocalized th and the child can have his attention drawn to the feeling of vibration in the mother's chest on which his hand lightly rests and also to the little stream of breath he can feel coming from her mouth and hitting the back of his hand. By changing to the sound of th, as in "thin," without any movement of tongue or lips, which merely means continuing the outward flow of breath but no longer uttering voice, the child can gradually be taught to notice that the sensation of breath against the back of his hand continues, though there

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is no longer any sensation of vibration in the mother's chest. He can also be taught to place his tongue in a similar position and make voice, thereby uttering the voiced sound of *th*, and then to continue the flow of breath but discontinue his voice and so uttering the non-vocal *th*. This process will bring to his notice the sensation of vibration that accompanies voice both in his own body and that of his teacher. It is not necessary for him to place his hand on his own chest in order to perceive the vibration in his own body, and it is undesirable that he should be allowed to do so, as it easily develops into an unnatural and abnormal habit. He can feel his voice in his own body *without any help from his hand*, but in your chest he must feel it with his hand, as he cannot *see* any difference between the two forms of *Th*. *He should not be allowed to form the habit of putting his hand on his own chest when he thinks of making a sound.* It is unnecessary and unnatural and we want to avoid, so far as we can, anything that is different from other people.

He cannot have too much contact with the person who is teaching him, for by such contact he gets much information that his eyes

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cannot convey to him about what is being done by the voice. Sitting in your lap; leaning against your chest when you are speaking; putting his hands on your chest, throat, head; all these are of value to him. But he can feel his own voice in his own chest, head and body, when once his attention is directed to it, *without any help from his hands*, and he should be trained to observe his voice in that way *without his hands*.

A very amusing way of getting his attention directed to your voice when you are making the two kinds of Th is to let him hold one end of a thin stick some three or four feet long with the other end touching your chest. As your voice stops and starts he will feel the vibration in the stick and will be both perplexed and amused by it. There would be no harm in his trying it on himself, touching his own chest with one end of the stick while he holds it in his hand.

By this means he can be given a conscious control of his voice, learning to start and stop it at will, as is necessary in learning to speak.

The sound of V is made by uttering voice when in the position for F, as in fin, that is with the under lip in the gentlest contact with

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the front upper teeth, and you can vary the Th experiment with the stick by placing one end on your chin as you alternately say F without voice and with voice, which latter is V. You can observe the difference if you say the words "few" and "view."

Again starting with the sound of N , if, while you prolong it, you will allow the front of your tongue to drop while the middle and back remain in contact with the roof, and voice and breath continue to escape through the nose, you will be making the sound of Ng (as in the finish of "sing").

If, while you are humming the sound of M with your lips softly shut and the breath and voice escaping through your nose, you will suddenly pinch your nose thereby stopping the outflow of breath, your voice will continue to sound for an almost imperceptible instant because the throat is slightly elastic and a little breath can still squeeze through the larynx even when both nose and mouth openings are closed. Then there will be a forced stop and you will have made the sound of B If you then let your lips part there will follow a little puff of the imprisoned air, but this puff is not really a part of

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the B. You will have said the B sound as in "umber."

But if you had stopped your voice just as you pinched your nose, so that the voice did not continue on with the last bit of breath that could squeeze out, you would have said the sound of P , and if you then part your lips there will follow the same little puff as the imprisoned air escapes, but this puff is not part of the P.

When you have carefully observed what happens in these exercises on B and P, you can try another. Say N and while saying it shift to Ng as described above, and then while saying the prolonged Ng close your nostrils by gently pinching them as you did for B and P, being careful to retain the position of the back of the tongue against the back of the roof of the mouth as in the Ng When you do this correctly you will have uttered the sound of G. As in the case of the B, the sound of your voice will continue for an instant after the nostrils have been closed owing to the slight stretching of the throat which allows a bit of breath to pass through the larynx even after all outlets at nose and mouth are closed. If you then release the back of your tongue

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there will follow the same little puff of imprisoned air as in the case of the B and P but this puff is not really a part of the G. You will have said the sound of G as in "hunger."

If, instead of permitting your voice to continue till it was stopped because no more breath could escape through the larynx, you had voluntarily stopped it at the moment when the nostrils were stopped, you would have said the sound of K as in "ink." You can compare the sounds of G and K by studying your utterance of the words "anger" and "anchor" and carefully observing the difference.

In teaching a deaf child I advise the teaching of the voiced sounds first; that is, B before P; D before T; G before K; V before F, and Z (the sound of S as in "was") before S (as in "wasp").

Now, if, while your tongue is in the position for N and you have stopped your voice while the breath continues to escape through your nose, you will, without any change in the position of your tongue, let the breath try to get out through the mouth instead of through the nose, the front of your tongue will pre-

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vent as it is against the roof of your mouth just back of your upper front teeth. Then if you suddenly release the position you will make a little puff that is very similar to the P and the K, but it is not either; it is a T. This T is also a "stop." In this case the imprisoning being done by the front of the tongue against the roof of the mouth just behind the upper front teeth, and the puff resulting when the tongue suddenly releases the breath, but the puff is not really a part of the T. The vocalized form of the T is D.

You will be able to compare the breath forms with the vocalized forms of these letters P, B, T, D, K, G, F, V, if you say alternately the syllables up, ut, ud, uk, ug, uf, uv.

I may as well add that Z is the vocalized form of S as you will see if you say Us, uz.

If you want to prove to yourself and the child that the breath does come out of your nose when you utter an N, an M and an Ng, you can show it very delicately and surprisingly by holding a hand mirror under your nostrils while making the sound and then looking at it quickly before the film of moisture fades away that is deposited on the cool glass by the warm breath.

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A fairly close approximation to the word "mother" can be obtained from the child by teaching him to follow an M with "uth" (the vocalized form of th). He will probably finish with a bit of voice at the end and that will help the word.

A small number of actual words and a large number of useful syllabic articulation exercises can be formed with the restricted list of sounds that I have said can be safely taught.

With M at the beginning we can have "mōū" (mō ũ), which would do for the moment in place of the word, "more." Moan. Mow (to cut grass). Mope. Mama. Mop. Moo. Moon. Muff. And Mūthū which, as I have said, might be accepted temporarily for "Mother."

With initial N we can have No. Now. Noon. Noo (which may easily serve for "new" and "knew"). Nuff (which might be accepted for "enough").

With F at the beginning we could have Fa (which could represent "far" with no great strain of the imagination). Fōū (not so far from the F.F.V. (First Families of Virginia) for "four"). Foe. Fawū (nearly "for"). Fun. Fown (which could be ac-

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cepted in the beginning for "found") and Fathũ (as an approach to "father").

Combinations with initial P would supply Papa. Paw. Poũ and Pooũ (close rivals of the Virginian for "pour" and "poor"). Poon (which might be accepted from the little one for "spoon." Pown (not so far from "pound").

W gives us Wawm. Wawn. Wown (that approach "warm," "want," "wound").

With the vowel Ä we can have Äm (almost "arm"). On. Of. Ä (aw) supplies Off. Äũ ("or"). Ō (oh) gives us Own. Ōvũ ("over").

Then there might be Ow for "how," and Owũ for "our." Up. And Um might do duty for "come" till a K can be made, as Ō might also serve for "go."

Excellent practice exercises preparatory to more formal speech teaching can be formed by syllabic drill with the sounds recommended for early use. Such as the rapid repetition of

Un un un un etc. (with *very slight* jaw movement)

Nä nä nä nä (with *no* jaw movement)

Now now now now (with only *very slight* jaw movement)

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No no no no (with *no* jaw movement and steady retention of the rounded and slightly protruded position of the lips for the vowel)

Noo noo noo noo

Mä mä mä mä

Mow mow mow mow (all with very slight jaw movement and no exaggerated motion of the lips)

Maw maw maw maw

Mo mo mo mo

Fä fä fä fä

Fow fow fow fow (all with very little movement of the jaw and *no exaggerated* motion of the lips)

Faw faw faw faw

Fō fō fō fō

Foo foo foo foo

Woo woo woo woo

Wō wō wō wō

Waw waw waw waw (as above)

Wä wä wä wä

Wow wow wow wow

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<u>Thu</u>	<u>thu</u>	<u>thu</u>	<u>thu</u>	(vocalized th)
<u>Thaw</u>	<u>thaw</u>	<u>thaw</u>	<u>thaw</u>	(With almost no movement except the slight protrusion and withdrawal of the tongue. Practically no jaw movement)
<u>Thō</u>	<u>thō</u>	<u>thō</u>	<u>thō</u>	
<u>Thoo</u>	<u>thoo</u>	<u>thoo</u>	<u>thoo</u>	
<u>Thä</u>	<u>thä</u>	<u>thä</u>	<u>thä</u>	(only the slightest jaw motion)
<u>Thow</u>	<u>thow</u>	<u>thow</u>	<u>thow</u>	

Study your own natural utterance of these syllables and *insist upon an entire absence of exaggeration on the part of the child*. Allowing him to form the habit of moving the speech organs through excessive and unnatural distances at this stage will render it more difficult to teach good speech later.

Ŭthŭ ŭthŭ ŭthŭ ŭthŭ

Awthaw awthaw awthaw awthaw

Ōthō ōthō ōthō ōthō

Oothoo oothoo oothoo oothoo

Ämä ämä ämä ämä

Owmow owmow owmow owmow

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Awmaw awmaw awmaw awmaw

Ōmō ōmō ōmō ōmō

Äfä äfä äfä äfä

Owfow owfow owfow owfow

Ōfō ōfō ōfō ōfō

Oofoo oofoo oofoo oofoo

Änä änä änä änä

Oownow oownow oownow oownow

Ōnō ōnō ōnō ōnō

Oonoo oonoo oonoo oonoo

Äpä äpä äpä äpä

Owpow owpow owpow owpow

Awpaw awpaw awpaw awpaw

Ōpō ōpō ōpō ōpō

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Äwä äwä äwä äwä

Owwow owwow owwow owwow

Ōwō ōwō ōwō ōwō

Oowoo oowoo oowoo oowoo

If the mother teacher wishes to make a little further excursion into a field of slightly more difficult speech exercises that are very valuable, she can attempt to get the child to *accent* the syllables in the last series (those containing two syllables).

The following will serve as examples of exercises in accent:

Amá amá amá amá

Owmoŵ owmoŵ owmoŵ owmoŵ

Awmaŵ awmaŵ awmaŵ awmaŵ

Omó omó omó omó

Afá afá afá afá

Owfoŵ owfoŵ owfoŵ owfoŵ

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Awfaŵ awfaŵ awfaŵ awfaŵ

Ofó ofó ofó ofó

Then,

Áma áma áma áma

Oŵmow oŵmaw oŵmow oŵmow

Aŵmaw aŵmaw aŵmaw aŵmaw

Ómo ómo ómo ómo

Ána ána ána ána

Oŵnow oŵnow oŵnow oŵnow

Aŵnaw aŵnaw aŵnaw aŵnaw

Óno óno óno óno

and so on with all the groups having two syllables, repeating each group twice, accenting the second syllable the first time and the first syllable the second time. Many variations of this order and a vast number of differing

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combinations can be made, as for example, *ōmō ōmō, ämä ämä, ämō ämō, ōmä ōmä.*

Eventually, accent must play a conspicuous part in the correct speaking of English, and it may as well be begun early.

Perhaps I have said enough to place the door ajar and permit the inexperienced mother teacher a glimpse into the maze of difficulties that surround the teaching of speech without the assistance of the ear, but I hope not enough to discourage her from undertaking the things which I have advised and which she has my assurance she is entirely capable of accomplishing.

The inexperienced are sometimes inclined to "rush in where angels fear to tread," but, while trained teachers of the deaf are by no means "angels," neither should the untrained mother teacher be classed in the other category. My desire is that she should courageously undertake the many things that lie in her power to do for her little deaf child while at the same time she recognizes that there are some limitations to her safe activities.

As the child advances further into his fourth year of life he will arrive at a gradually increasing maturity of mind and body

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that will make it possible for the mother teacher to make more and more use of the speech teaching suggestions I have given. But her constantly remembered motto must be to "make haste slowly," and she must carefully guard against falling into the attitude of expecting too much of the little child.

More Advanced Reading

With the increased maturity and mentality that comes with the fourth and fifth years of life the child can be asked to make rapid progress in learning to read the printed and written page and to understand what is said to him by speech on the part of those in his family and social acquaintance.

From the game of matching printed slips and performing the actions named on such slips the transition is easy to rudimentary primers with large type and interesting pictures and the use of such books should be introduced as early as possible in the fourth year.

The sooner the child learns to read a simple book the better, but great care and ingenuity must be shown to be sure that he so learns as to *associate pleasure* with the reading of books, and that he *regard printed matter as*

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an interesting source of ideas and not merely as a boresome accompaniment of interesting pictures. Make him *act out* the very simple events described by the print, in order that he may discover that the printed page has a close connection with interesting ideas. You will probably have to prepare some little stories yourself with a typewriter as an intermediate step between the words, illustrated by pictures, in the primers, and the association of *connected ideas* and *sequences of action* with printed sentences. Most primers are either too difficult, or too stupid to serve the purpose we require of *awakening a desire* in the child's mind to *dig* the ideas from the printed matter. The matter they use is either too *disconnected* in ideas, or too difficult in expression. The matter we need must be within the *already known vocabulary* of the child and *contain ideas that naturally result from each other*.

The following might serve as a sample of one of these supplements to the primers.

A BOY SAW A BIRD'S NEST IN
A TREE. HE CLIMBED THE TREE.
HE LOOKED IN THE NEST. HE
SAW FOUR EGGS. THE EGGS

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WERE BLUE. THE MOTHER BIRD WAS AFRAID. SHE HOPPED FROM BRANCH TO BRANCH. THE BOY WAS GOOD. HE DID NOT TOUCH THE EGGS. HE CAME DOWN FROM THE TREE. THE MOTHER BIRD SAT ON THE NEST. SHE WAS GLAD THE BOY DID NOT TOUCH HER EGGS.

Of course, before this story could be given to the child the meanings of the principal words in it must have been taught by use of the devices already suggested. He should know the appearance and meaning of the words boy, saw, bird, nest, tree, climbed, look, four, egg, blue, mother, afraid, hop, branch, good, touch, down, sat, glad. The words "afraid," "good," "glad," will require considerable preliminary practice before the ideas they convey are thoroughly in the child's mind. The story should not be given to him till it is practically certain that there is a clear understanding of the words I have mentioned. The other words do not matter much and it is essential that he be accustomed to overlook words that are not "key" words

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in the sentences and not form the habit of being brought to a halt by the first word that he does not know. He should be trained to *read for ideas* and to *infer* to a considerable extent what words must mean from those that he already knows. For example; if he knows "boy," "saw," "nest," "tree," he really does not need "a," "bird's," "in" to get the mental picture of a boy looking up in a tree and seeing a nest. If he knows "climbed," and "tree," it should be no stumbling block to him if he does not know "He," and "the." If he knows "look" and "nest," he should not be halted by the fact that there is an "ed" on "look," or by the word "in." If he has learned "egg" and "blue" the "the" and "were" should not prevent him from getting the thought and passing at once to the next sentence.

If this story was typed on a good-sized piece of paper and pasted on a sheet of cardboard and given to the boy to work at by himself and after he had tried to get the ideas he was asked to draw a series of pictures himself to illustrate it the experience would be very valuable. The first time this was done it might be necessary to give him a little help and suggestion, though it would be

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much more valuable if he could be led to read it and draw the pictures without any outside help. Naturally his pictures would be very crude, and perhaps unrecognizable by any one unless the preceding facts were known, but to him they would be very real.

He could be led to draw first a tree with the nest in it and the boy below. Then the boy half way up the tree, or all the way up and looking in the nest, with the mother bird on a branch. Then the boy below and the mother bird on the nest. Several pictures in succession on a sheet of paper. Perhaps he could be allowed to color the pictures to suit his fancy.

With this example in mind you could make other stories and let him read and then illustrate them. But they must be very simple and very real and plain and contain no ideas wholly new and foreign to him. Each story should be led up to by first making him familiar with the "key" words, so that he can run through the sentences and get the thought, even if there are some non-essential words that he does not know.

His ability to read for ideas will, and should, much exceed his ability to express himself, either in speech or writing. But at

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any time now he can be taught to form the letters (large and round) with a pencil on paper or with crayon on a blackboard, and little by little be led to write a few short well-known words. Gradually he can be trained to write to express ideas of his own. Accept his first efforts, no matter how crude and imperfect, with much show of pleasure. Be very careful that his enthusiasm is not dampened by lack of appreciation. His first efforts at writing may well be to copy the printed words on the cards with which he began to learn to read. Then he can be led to observe the recurrence of the same letters and gradually can be taught to make the letters separately. You can make duplicate cards of the most familiar words and use written script, made round and plain, and teach him that the new, written cards mean the same as the familiar printed ones he has been using. The addition of script letters will not be a difficult matter, but should not be attempted till he is very sure of the printed form. You can then substitute the written cards for the old printed cards and he will quickly learn to put them around on their respective objects to perform the

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actions called for just as he did with the old cards.

As time goes on you can make cards for all the sentences that he has been taught to read from the lips and teach him to understand that the meaning is the same whether the words are spoken or written.

He can have further practice with numbers, first in recognizing the number of objects and, in course of time in the addition of small numbers like one and two to make three, two and two to make four, etc. First take a series of objects, such as buttons, pins, pennies, beans, stones, etc., and selecting two of one kind place your hand over them and induce him to pick out the same number of the same thing and put his hand over them. Then pick out three of some other object and have him do the same.

You can type the numbers, up to nine, on cards and teach him to select the card that corresponds to the number of objects you have under your hand. In course of time you can teach him to print, or write the numbers himself.

When he is quite familiar with the numbers themselves you can try him on simple addition. Put two pennies under one hand.

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Take one more penny and, without lifting the hand that covers the first two, slip the third one under it and indicate to the child that you want to know how many pennies are now under the hand. He will not know at first so you will lift your hand and show him the three pennies and have him select the card on which is the word "three." Repeat this several times till he gets the idea and shows you the "three" card correctly each time. Then slip two pennies under the hand that is already covering two pennies and teach him to show you the "four" card. Do not carry this so far as to confuse him and make it so difficult that he becomes discouraged.

Always be on the outlook lest you ask something of him before he is quite ready for it. If you do not get results it will be well to discontinue that particular exercise for a time and return to it later when he may be more ready for it.

CHAPTER V

AFTER THE FIFTH YEAR OF LIFE

IF there is a day school for the deaf within a feasible distance of your home, or if you are able to send him to some small private school it would be well to enter your child not later than the end of the fourth year. If you have been able to do with him the work as outlined in these pages you will find that he is prepared to start ahead of the beginning class and is ready to benefit to the full by the instruction provided in the school, and to make rapid progress.

If you must send him to a state institution I think you would better continue to work with him at home till he is at least six years of age. The conditions in the large state institutions are such that very little children are usually better off in their own homes when it is possible to give them any educational assistance there.

If you keep him at home after the end of the fourth or fifth year you should use your

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lesson time with the child in increasing his ability to read intelligently, to use larger numbers and to do the simple operations of addition, subtraction and multiplication with small numbers, and to read the lips more and more fluently as well as to use such spoken words as you may have been able to teach him to utter.

When he is six he really should enter some special school for the deaf, and begin his more formal education. The time you have given him will be of immense value to him in developing his mentality and in starting him in the various lines at the correct time indicated by nature. He will be well in advance of other deaf children of his age who have not enjoyed the same advantages.

You should keep yourself informed as to what he is learning at school and when he comes home for vacations you should insist upon his use of all that he has acquired. See that he uses the best English he has and do not accept from him imperfect sentences when you know he can, if he will make the effort, use complete expressions, either spoken or written.

Speak to him always and insist on his speaking to you. Do not accept gestures

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from him as expressions of his ideas. Encourage him to read and see that he is provided with suitable interesting material. Insist upon his doing a little writing each day, even if it is only a few sentences by way of journal.

When he is at school write him at least once a week about home affairs, using plain, straightforward language and writing distinctly. Show a real interest in all that he studies and does. Provide him with suitable companionship when at home and help him to hold his own with his playmates. Encourage him to associate with hearing boys and girls, and give him special home training in their games so that he may be already familiar with what is expected of him before his hearing playmates start to teach him.

Schools for the Deaf

In 1927 there were in the United States 192 special schools for the deaf, and 7 in Canada.

Every state in the union except Delaware, New Hampshire, Nevada and Wyoming maintains a residential school for the deaf and in some of the states there are several, as the total of public residential schools for the deaf is 63. There were 110 public day

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schools in the United States and 19 denominational and private schools.

The age of admission to the public residential schools is usually six years, but in a few pupils are admitted earlier and in others later.

The public state schools, residential and day, are free to residents of the state and children from other states are admitted on the payment of tuition ranging from \$300 to \$600 per year.

I shall be pleased to send to anyone on request the address of the school nearest to the writer's home.

Most of the public residential schools are conducted by what is known as the "Combined" system. That means that while every pupil receives instruction in speaking and lip reading, the sign language, or finger spelling, or both, are used to some extent both in instruction and in general communication with the pupils and all pupils are familiar with those silent methods of communication.

There are many schools in which the purely oral method is exclusively employed and no use is made of the sign language or finger spelling by the school staff either in or out of the class rooms.

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During the first half century of the education of the deaf in the United States all the instruction was given by silent methods. These methods are being gradually supplanted by oral methods, and today the greater part of school room procedure is by speech and writing only, though in the shops and dining rooms and playgrounds silent methods of communication are employed and permitted in many schools.

Historically our American schools were modeled upon the National Institution for the Deaf in Paris, France, which was at that time, 1816, conducted by silent methods. Long ago this method was abandoned in France, but its use has been largely continued in the United States.

Some of the most efficient schools for the deaf in the United States are conducted wholly without either the sign language or finger spelling and their educational results exceed in some cases the best results attained by the "Combined" schools, and in all cases are as good as "Combined" schools of similar type. The use of the sign language and finger spelling is not only unnecessary in educating deaf children, it is really a handicap, and in time will be wholly eliminated from our educational system.

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Aids to Hearing

Before closing I ought to say that (more is the pity) there are many persons who live by trading upon the ignorance and credulity of the unfortunate. The deaf and the friends of the deaf fall an easy prey to the advertisements of quack remedies, ear drums, etc., that are always useless and sometimes actually dangerous. The American Medical Association has had the courage to issue a pamphlet in which these fake cures are described and exposed, and every deaf person, and parent of a deaf child, should have one of these pamphlets. The title is "Deafness Cure Fakes," and can be obtained by writing to the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

QUESTIONS THAT PARENTS WOULD BE LIKELY
TO WISH ANSWERED BY THE BOOK

What are the causes of deafness in little children? (Preface, pp. 12, 13, 14.)

Are there any ways of preventing deafness in little children? (Preface, pp. 14, 15, 16.)

How early can deafness be discovered in a little child? (Pp. 38, 39, 40-41.)

How can the fact of deafness in a little child be determined (Pp. 38 to 43.)

How can the degree of impairment of hearing be determined in a little child? (Pp. 38 to 43.)

At what age can the parents be sure of the degree of deafness of the child? (Pp. 38 to 43.)

What should be done first when deafness is suspected? (P. 27.)

Can deafness be cured? (Preface, p. 16.)

How can deafness be cured? (Preface, p. 16.)

Can increase of degree of deafness be prevented? (Preface, p. 16.)

How can increase in degree of deafness be prevented? (Preface, p. 16.)

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Is total deafness in little children very common? (P. 31.)

Is some degree of impairment of hearing very common among little children? (Preface, p. 11.)

Why is deafness not always suspected at once when it exists? (Pp. 28, 29, 30.)

Do some children possess some power of hearing without parents discovering it? (P. 28.)

How can that be so? (P. 28.)

Can a partial hearing that had not been discovered be trained to be useful? (Pp. 30, 31, 32.)

Can a little child have some hearing and yet not learn to speak? (P. 28.)

Why does a deaf child not learn to speak? (P. 24.)

Can a totally deaf child be taught to speak? (P. 24.)

How early can the instruction of a little deaf child begin? (Pp. 23, 44.)

Can any instruction be given at home by the parents and friends? (P. 43, etc.)

How can parents learn how to teach their deaf children at home? (Preface, p. 18.)

At what age should a deaf child go to school? (Preface, p. 19.)

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Where are the special schools for deaf children? (Pp. 152, 153.)

What are the charges? (Pp. 152, 153.)

At what age are deaf children admitted to the special schools? (Pp. 152, 153.)

Must a deaf child be taught finger spelling and the sign language? (Pp. 153-154.)

What can an educated deaf person do? (Pp. 21, 22.)

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